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THE

WESTERN JOURNAL

and Civilian.

VOL. IX. March, 1853. No. VI.

ARTICLE I.

MISSOURI: Past, Present and Future.

During a period of more than five years devoted to the publication of our Journal, we have labored with untiring zeal to establish a system of public economy adapted to the geographical relations, climate and natural resources of the valley of the Mississippi. And although our work, in this behalf, is not accomplished, yet recent events authorize the belief, that the views we have advocated will, in time, be carried out by the inhabitants of this region.

In discussing the various topics, relating to this important subject, we have occasionally alluded to the policy of Missouri in terms, which to some may have appeared unkind and perhaps unjust; but it is a source of gratification that we now find something to commend in both its people and policy. We believe that the people of Missouri have not been correctly understood by those of other States, and we now desire to place them in their true light before the world.

The natural wealth of Missouri has been developed by very slow degrees. But this is not to be attributed so much to a want of intelligence, industry or enterprise, on the part of its inhabitants, as to a variety of causes beyond their control. For many years the course of events has been adverse to the settlement and improvement of this State.

The institution of slavery has prevented the citizens of non-slaveholding States, who desired to pursue the business of farming, from coming to Missouri; while many, in the Southern States, have doubtless been deterred by the opinion, that property in slaves was less secure in this than in the States farther south.

These causes have been in operation ever since the adoption of the Constitution, and have prevented immigration from the non-slaveholding States almost entirely; except in the case of a few merchants, traders and artizans.

But other causes have operated against the settlement of Missouri by emigrants from the slaveholding States: the acquisition of large districts of land from the Indian tribes, in the States of Georgia, Tennessee, Alabama, Mississippi, Louisiana and Arkansas, has followed each other in such rapid succession, that individuals of the older slaveholding communities, desiring to emigrate, have been attracted to a climate better adapted to a profitable employment of slave labor, and more congenial to their constitutions and tastes. These causes, combined with the cost of transporting agricultural products from the interior to a market, have greatly delayed the development of our agricultural resources, and depreciated the producing capacity of the State in the estimation of many at home and abroad.

Nor have events been more favorable to the development of our mineral wealth. The discoveries of lead, in the vicinity of Galena, checked the progress of mining for that metal in Missouri for many years, and at a time when the business of mining had begun to revive in this State; the discoveries of gold in California attracted the miners to the shores of the Pacific, leaving our rich deposits of lead to be removed by a race of men possessing more patience and content with prospects less brilliant, but more certain, than mining for gold in California. The production of iron, also, has been affected by external causes. The gradual reduction of the duties on the foreign article, under the Compromise Act of 1832, was calculated to discourage prudent men from erecting works, especially in a country so new as Missouri. And, before sufficient time had elapsed, after the rate of duties was increased, under the law of 1842, to enable our citizens to get fairly under way in the iron business, the tariff was again reduced to a rate which convinced well judging men that, except at locations possessing extraordinary advantages, the making of iron in Missouri would be unprofitable.

And, besides, the population of Missouri, thinly scattered over its broad area, and grouped in settlements far apart, have been deprived of the benefits derivable from intimate intercourse and

frequent interchange of views and opinions. Thus situated, they have, long since, perceived that other States were leaving them far behind in respect to the improvements of the age; and though conscious of their own rich and varied resources, and desiring their development, yet they were incapable of appreciating the power which they possessed to improve their condition; there was no concert in action, none in opinion.

Under the influence of so many causes adverse to the settlement of the State, and to its progress in improvements, the native energies of the people have been paralized, presenting a case similar to that of an individual possessing unbounding wealth without the capacity of making it available for any other purpose than that of sustaining his own existence. Indeed, when we review the facts connected with the history of Missouri, and contemplate the nature and extent of the improvements required to counteract and surmount the influence of the adverse causes enumerated, it is obvious that an extraordinary degree of intelligence and moral courage was required, on the part of the people, to systematize and undertake the accomplishment of a plan, commensurate with the wants of the country. But the people of this State have learned, from experience, that communities as well as individuals must counteract the operation of adverse circumstances, by active and well directed exertions, or their natural wealth will remain undeveloped: or, if drawn out, will go to enrich those who possess a greater degree of energy and enterprise. Missouri has awakened to a sense of her strength. She has assumed an attitude, and adopted measures consistent with the high career indicated by her geographical relations and natural resources. Indeed, there was no other alternative than that of submitting to the consequences of events over which she had no control, permitting her wealth to remain buried in the earth, the social and commercial advantages of her central position to be diverted and transferred to her neighbors or, placing herself, at once, by a bold but judicious movement at the head of a great system of improvement embracing the entire region west of the Mississippi. Had she not given form and substance to this idea by legislative enactments, all efforts to develop the resources of the State by constructing railroads, of a local character, would have been enfeebled by the want of concert at home, and the lack of respect and credit abroad. Can she sustain the position assumed, and accomplish the grand design indi-

cated by her system of internal improvement? A glance at her present condition and resources will afford an answer to this inquiry.

The State of Missouri embraces an area of 67,380 square miles, with a population, according to the census of 1852, of 724,667 inhabitants, and is believed to possess the elements of substantial, enduring wealth in greater variety and volume, than any other State in the Union, east of the Rocky Mountains. Her public debt, at the close of last year, except a small amount of bonds issued in aid of the Pacific railroad, amounted to only $857,000, while the ordinary revenue exceeds the expense of the Government. And withal, the producing classes are free from pecuniary embarrassment, and eminently prosperous throughout the State.

With these resources in the hands of an intelligent, industrious and enterprising population, numbering 724,667 and rapidly increasing, cautious and timed, indeed, must be the individual who doubts the capacity of the people of this State to accomplish all they have undertaken. Missouri, in 1853, should not be compared with Missouri as she has been in times past, when there existed no social combinations for public improvement, no general law authorizing individuals to form corporations for industrial purposes, no efficient system of common school education, no benevolent institutions designed to ameliorate the condition of the unfortunate; when State and local measures were tested by the standard of party and national politics; when party principles and abstract doctrines in the science of government were discussed, until the people believed that their prosperity and happiness depended more upon the action of the General Government than upon their own industry and good conduct. The reformation which was manifested first by the acts and proceedings of the General Assembly of 1848—49, has revolutionized the State in the short space of four years. Since that period a system of railroads, more comprehensive and complete than any elsewhere devised, has been projected, and provision made by the State for a loan of its credit to the amount of $8,250,000, to aid in constructing about 1100 miles of route, traversing every important district of the State. The surveys on three of these routes have nearly been completed, and the work, on one of the lines, is progressing as fast as consists with the economy of the enterprise. A general law, authorizing three or more individuals to form corpo-

rations for mining and other industrial purposes, passed at the session of 1848–49, has been so amended as to make it eminently useful; a system of common schools, introduced at the same session, was adopted by the late General Assembly; provision has been made for a geological survey of the State;* a liberal provision has been made in behalf of an Asylum for the Insane, and, also, for the support of a Juvenile Reform School. And as further evidence of the spirit of the late General Assembly, we may mention the appropriation of $4,000 for the purpose of procuring and forwarding specimens of our minerals for exhibition at the "Crystal Palace," about to be opened at New York, for the Exhibition of the Industry of All Nations.

As faithful historians, however, it is our duty to record the fact, that the late General Assembly refused to modify the interest or usury law, so as to authorize parties to contract for any rate not exceeding ten per cent. per annum; it also rejected a bill to authorize limited partnerships;—measures which we have regarded as highly beneficial to the mercantile and, consequently, to the general interest of the State. But in view of the many excellent measures adopted by the late General Assembly, we feel no disposition to complain that some few which we desired and labored for, have been rejected. Enough has been done to establish the great principles of progress, and convince the world that Missouri has assumed her true position among the States of the Union. No apprehension need be felt that she will relapse into the state of apathy, from which she has been aroused. The people are beginning to comprehend the power and efficacy of social combinations, the pecuniary and social advantages to be derived from a speedy, certain and cheap mode of transporting persons and property, and the vital importance, in a social and political point of view, of an efficient system of common school education. Their feelings of patriotism have been awakened; emotions of State pride have been excited; and their mental visions enlarged, embrace objects more grand and worthy of attainment, than any which have heretofore occupied their attention.

In view of all these elements, physical, social and moral, we are fully persuaded that there is no other State or Territory of this broad confederacy which offers so many solid advantages to the

* This measure passed in the House of Representatives at the session of 1848—1849.

agriculturist, miner and manufacturer, as our own State of Missouri. It is true, that there are many inconveniences, and even drawbacks, incident to the commencement of all pursuits in a new country; but these must soon disappear in a region whose resources are in a state of rapid development, and where new avenues are being opened to the commerce of the most distant parts of our common country. To say nothing of the works of improvement now in progress east of the Mississippi, our own system of railroads, when completed, by the co-operation of other States, will open a communication with Fond du Lac, of Lake Superior, the waters of Hudson's Bay, the valley of the upper Missouri to the base of the Rocky Mountains, San Francisco and the mouth of the Columbia on the Pacific ocean, the valley of the Red River, of the South, the Gulf coast of Texas, and with the city of New Orleans. These lines, all radiating from the city of St. Louis, will constitute a system of railroads which, in connection with the navigation of the Mississippi and its tributaries, will afford to the commercial metropolis of Missouri more extensive facilities for the exchange and distribution of commodities, than can ever be enjoyed by any other city on this continent.

Though possessing her full share of talent, Missouri, as a State, has hitherto exerted no remarkable degree of influence upon the public policy, economy or social condition of the other States. But should the Union of this Confederacy be preserved to an indefinite period, it is obvious that she is destined, in time, to stand at the head of American States. With a population as dense as that of Massachusetts, Missouri would contain about 8,600,000 inhabitants, and it may be affirmed that, including the inhabitants of cities, she is capable of sustaining a population of 15,000,000 in a comfortable condition. Her broad area and central position, embracing the commercial metropolis of this great valley, will enable her to exert a larger influence upon the destinies of the nation, than any other State of the Union.

These views of the future, suggest reflections which should be improved by every citizen of the State; they are full of admonition, of instruction.

In respect to the general policy of the nation, the central States must, by virtue of the laws proceeding from their geographical and social relations, exert a controlling influence upon the border States, and holding the balance of power, will, when all parts of the country shall have been fully occupied, control the policy of

the nation. Hence the destiny of this mighty republic, so far as it depends upon the actions of men, will be in the hands of the central States of which Missouri must be the chief. Then, what a field is here for the labors of the philanthropist, the study of the statesman, the instructions of philosophy, the teachings of christianity!

A just appreciation of the future pre-eminence of Missouri amongst the States of the Union, is calculated to elevate the moral tone of its inhabitants, and energise their character. For it is natural, that a deep sense of responsibility should incite them to a scrupulous discharge of their duties, while a consciousness of their power will lead them to the undertaking of great enterprises, which smaller States could never hope to accomplish.

Owing to the slow progress made by Missouri in the improvements of the age, many of her citizens have emigrated to California; but we sincerely hope that the changes which have taken place in the policy and prospects of the State, will henceforth reconcile our people to remain in a country possessing the elements of comfort and happiness in greater variety and abundance, than any to be found upon the coast of the Pacific ocean. In concluding, we respectfully commend the foregoing suggestions to the consideration of those who contemplate a removal to the Pacific coast. We admit that the field of enterprise in that region is broad, and, in a high degree, attractive. But it should be borne in mind, that the privations and sacrifices incident to the settlement and pursuits of California greatly exceed the benefits derivable from the mines, the agriculture or commerce of that State.

If a reasonable and sure reward for the toils of industry, if the benefits which flow from institutions calculated to promote the highest objects of man's being, and a field where the labors of the philanthropist, philosopher, and statesman may exert a wider influence, than elsewhere on this broad continent, can satisfy the minds of our citizens, then have they a home, which no rational individual would exchange for a residence on the shores of the Pacific with all their golden attractions.

ARTICLE II.

CALORIC.

A Fragment.

AN ESSAY ON CONGELATION, CONDENSATION, EVAPORATION, THE FORMATION OF CLOUDS, AND THE PRODUCTION OF RAIN, AND SNOW.

By HON. A. BEATTY.

Second Part.

The process of congelation is a very simple one. When so much *caloric* is extracted from a quantity of water as to bring its particles within the sphere of cohesive attraction, a solid mass is formed, called ice. The same thing takes place, when mercury is exposed to a degree of cold 40° of Fahrenheit below zero. It then becomes a solid substance. The like principle is applicable to all metallic substances, and to all other bodies in a fluid state. They will all become solid—or congeal—by the abstraction of a portion of their *caloric*.

It has been shown, in the first part of this essay, that if a change were not wrought in the state of vapor, soon after it leaves the earth, it would be condensed by the great degree of cold that always exists in the higher regions of the atmosphere, and return to the earth, in the form of dew or rain. That cold is capable of condensing vapor, is very manifest. Instances of this fact may be seen in the condensation of steam, in passing through the worm of a cooler. Another familiar instance of this fact is the adhesion of particles of water, to the exterior surface of a glass tumbler, containing some cold water, during a warm summer's day. The effect of the tumbler, rendered cold by the water, upon the vapor continually floating in the lower regions of the atmosphere, during a warm summer's day, is like that of the water in the cooler, upon the steam passing through the worm. The water, in both instances, has been converted into vapor, by the agency of *caloric*. When this *caloric* is drawn off, the vapor will again assume the liquid form.

The extraction of *caloric* from the steam of boiling water is always effected, in some degree, by bringing it in contact with substances, whose temperature is below 212°. But in the case of a condensation of vapor, by the glass tumbler, it would not be perceptible unless the cold were sufficient to reduce its temperature considerably below that point.

The reason of this is, that the temperature of the atmosphere is always greatly below 212°, and the solvent power of the air, which causes it to absorb the water, as fast as it is condensed by the tumbler, unless the process of condensation is very rapid, which is always in proportion to the difference between the temperature of the water and the atmosphere.

I will here mention a circumstance, which ought to have been noted, in the first part of this essay. It was there stated that so soon as the particles of water have their surface so much extended by the agency of *caloric* as to overcome the power of gravity, they will ascend in the form of vapor. But it must be observed, that it is not necessary, nor is it actually the case, that the water is separated into particles so minute as to give them a surface more than sufficient to counteract the power of gravity. If these divisions were produced by mechanical means, this would be necessary. But being occasioned by the agency of *caloric*, a fluid whose specific gravity is greatly less than that of air, which, having a strong affinity for the particles of water, unites with them, and enables them to ascend on principles similar to those by which a balloon is raised in the atmosphere. The balloon, of itself, is incapable of rising, but when filled with a quantity of gas, whose specific gravity is much less than that of the atmosphere, it is enabled to ascend, with a considerable weight attached to it.

Thus particles of water, though not specifically lighter than the atmosphere, are enabled to ascend, because of the *caloric* united with them. And when deprived of this caloric, they will again fall to the earth, unless they shall have formed a combination with the atmosphere, before the caloric is thus drawn off from them. Hence the reason why vapor condenses, by being brought into contact with cold substances. For then, in consequence of their inferior temperature, having a stronger affinity for *caloric*, draws off that fluid from the vapor, and causes it to condense.

The capability of substances, whose temperature is less than 212°, of condensing steam, being thus established, it is necessary to show why vapor is not condensed immediately after it leaves the earth. This, it was observed in a former part of this essay, is owing to a combination which is effected between the vapor and our atmosphere. Although such a combination does take place, at no great height from the earth, yet this will not account for the vapor's not being immediately condensed by coming in contact with the atmosphere. Vapor is always of the same temperature with the water from which it arises, and as evaporation goes on in every degree of temperature, from 32° to 212°, it necessarily follows, that water may exist in the form of vapor, when the temperature of the atmosphere is nearly as low as the freezing point. When vapor rises from boiling water, it possesses great elasticity, and would continue to do so at a temperature of 212°. But when below that point, the vapor gives out a part of its *caloric*, and its temperature is reduced so as to form an equilibrium with the air with which it comes in contact. It still, however, exists in the form of vapor, but with a greatly diminished elasticity. It has been shown, that a glass tumbler, filled with cold water, will condense vapor when its temperature is below that of the vapor, but will not when its temperature is equal or superior to it. The air

is not better, probably not so well calculated to condense vapor as the glass tumbler; when, therefore, evaporation is going on, in the natural way, the vapor cannot be condensed, because the air with which it comes in contact, is of the same temperature with itself; and as it rises higher in the atmosphere, its temperature is gradually reduced, and is thus kept in equilibrio with the surrounding atmosphere. Hence complete condensation cannot take place, though this is effected, in some degree, as a necessary consequence of its being deprived of a part of its *caloric*.

Perfect condensation seems to be produced by a sudden contact of vapor with substances, whose temperature is considerably below that of the vapor. Thus if the breath is suddenly brought in contact with a cool mirror, it immediately condenses. In this way we may account for the falling of dews, during the night. The air, near the earth, expands considerably during the day. When the sun sets, it, in some degree, condenses, and thus the cold air of the higher regions of the atmosphere is suddenly mingled with the vapor, which has been raised during the day, and has not yet affected a combination with the atmosphere. But although vapor will not be immediately condensed, upon coming in contact with the atmosphere, yet it is evident that if it should continue to rise, it would reach such a degree of cold as would cause it to condense, and fall in the form of dew, rain or snow. This, however, is prevented by its combining with the atmosphere so intimately as to compose a part of it. This like all other combinations, must be ascribed to the laws of affinity, one of the most universal and active agents in the operations of nature. The absorbant power of air is familiar to every person. Thus after a heavy rain the roads are dried much sooner by a high wind than by a warm sun. Another familiar fact is the drying of linen on a windy day. This operation is performed, during a windy day, without the least assistance of the sun. The reason why a high wind more rapidly absorbs moisture, than air at rest, is that the affinity of air for moisture diminishes in proportion to the quantity absorbed. During a perfect calm, the air, in contact with the moist substance, soon becomes saturated, and can absorb no more until a part of its moisture is drawn off by the adjacent air, by reason of its undiminished affinity. But all the air adjacent to the moist body having soon become saturated, the process of absorption will progress very slowly. But when the wind is high, there is a continual supply of unsaturated air, in contact with the moist body; the absorption must, consequently, progress very rapidly.

This great absorbing power of air is a very fruitful source of supply for future rains, in addition to the supply derived from the process of evaporation. If the absorbing power of air is as great as the instances alluded to prove it to be, how much more so must it be when water is changed into vapor? Water, in a state of vapor, exposes a surface very greatly superior to what it did in a

liquid state, and thus enables the unsaturated air to come in contact with the very minute parts of the water, and consequently increases the rapidity of the process.

If other proofs than those already referred to, to show that vapor combines with the atmosphere, at no great height above the earth, are necessary, they will be furnished by experiments made with the hygrometer to determine the moisture of the atmosphere, at different heights from the earth. If such combination did not take place, there would be, during a drouth, a considerable accumulation of moisture in the atmosphere, arising from the evaporation constantly going on. We might also expect to find floating, in the higher regions of the atmosphere, an immense quantity of moisture, in the form of clouds. But so far from the elevated regions of the atmosphere being continually involved in a thick fog, as might be supposed from the quantity of vapor continually ascending, it is found that the air is much drier there than near the surface of the earth. This was experienced by M. Sausure and M. De Lac, in a journey up the Alps. The air was found to be excessively dry, and evaporation to go on much more rapidly, than in the region below. The surface of their bodies was parched, and an excessive thirst took place by reason of the rapid absorption of moisture. The same dryness was indicated by the hygrometer, which scarcely indicated any degree of moisture, even when they were surrounded with clouds, hail and rain. These facts prove that there is a change wrought in the state of vapor, soon after it rises from the earth. Vapor when it first rises, sometimes assumes the appearance of fog, which, when examined with a microscope, appears to be composed of very small spherules of water, hollow and filled with a fluid specifically lighter than air, by means whereof they ascend into the atmosphere. So long as the aqueous gas retains this form, it retains its humidity, and will communicate moisture to the hygrometer. In this state it readily condenses, when brought into contact with bodies of lower temperature, and this the more readily in proportion as its temperature exceeds that of the substances with which it comes in contact. The colder substance, having a stronger affinity for *caloric*, extracts so much of that fluid from the water as to produce an equilibrium, and then the condensation ceases.

But if, before condensation, the vapor has had time to combine with the atmosphere, it forms a part of its base, in like manner as oxigen forms the base of oxigen gas. When this combination is complete, the air will no longer show any degree of moisture, by the test of the hygrometer; nor is it capable of being condense, by coming in contact with cold substances, without some chemical agency, by which a decomposition shall have been effected. It now forms a part of the atmosphere, and is capable of moving, with the utmost facility, to the most distant regions of the earth. Hence we perceive the reason why countries, about the sources of

large rivers, receive back the immense quantities of water, which are continually flowing from thence to the ocean.

Upon the ocean, in consequence of the abundance of moisture, evaporation proceeds more rapidly than on the land, and consequently a greater quantity of vapor combines with the superincumbent atmosphere. Hence it follows, that the sea atmosphere soon becomes heavier than that over the land; and as the air has a constant tendency to keep up an equilibrium, currents of air will flow from the sea to those parts where the atmosphere is lighter. As there is also a tendency in the air, to preserve an equilibrium of saturation, it follows that the water evaporated is, by means of its combination with the atmosphere, carried to all parts of the earth, though probably not in exactly equal proportions. The process of evaporation, which is continually going on, is not only aided by the wind, but also by the sun's rays, for we frequently see fogs dissipated in a short time after the sun breaks out.

But, on the other hand, it must be observed, that this *combining process* is not only checked, but completely suspended, when from any cause, a chemical decomposition of the atmosphere takes place. In such case, moisture is always given out, and this will, of course, prevent any combination for the time being. We frequently behold clouds suddenly formed, and as suddenly dissipated, but without any rain falling. In what manner, and by what causes these suddenly changes take place, is not well understood. The formation of clouds arises from a decomposition of a part of the atmosphere, by which its moisture is given out, in a greater or less degree. Hence we may account for the phenomena attending the formation of clouds, and the production of rain and snow. But, before I enter upon this subject, I will make some observations upon the manner, in which this decomposition takes place, premising, however, that it is a subject, by no means, clear of difficulty.

When moist air is suddenly rarefied, by being freed from pressure, there is always a precipitation of water, as may be distinctly seen, when the receiver of an air pump is quickly exhausted. Under the article, Reece's Cyclopaedia, the following experiment is related. "There is a curious phenomenon, in the fountain of Hiero, constructed on a very large scale, in the Cremnitzean mines, in Hungary. In this machine the air, in a large vessel, is compressed by a column of water, 260 feet high. A stop-cock is then opened; and as the air issues with great vehemence, and, in consequence of its previous condensation, becomes immediately much expanded, the moisture it contains is not only precipitated, as during the exhaustion of a receiver, but falls down in a shower of snow, with icicles adhering to the nose of the cock."

It may be added, that Dr. James Hutton, Fellow of the Royal Society, Edinburgh, has shown that by mingling a portion of

transparent, warm, humid air with a portion of cold air, the mixture will become opake, and a part of the water will be precipitated. Here a partial condensation of vapor takes place, and *rain* is produced. From the experiments related above, it appears that a sudden expansion of air is always attended with a precipitation of a part of its moisture, and that by mingling warm, humid, transparent air, with that which is considerably colder, condensation, to a greater or less extent, is produced. Hence we may perceive the manner in which clouds are formed, especially during the prevalence of warm southerly winds. Such winds are usually warm, and containing much moisture, in a state of combination, when they come in contact with a northern atmosphere, condensation, to a greater or less extent, must take place, according to the principles of Dr. Hutton, and consequently clouds will be formed. In the process of condensation, large quantities of *caloric* are given out. This produces an expansion of the atmosphere, which causes the mingled air, which had accumulated by the southern winds, to rise, like smoke from a chimney, and being thus relieved, in part, from pressure, causes a farther expansion, and the giving out of more moisture, until it has so far accumulated, that the atmosphere can no longer bear it up, when it will fall in the form of rain.

Southern winds blowing towards northern mountains, when approaching them; must rise rapidly, in proportion to the ascent of the high lands, and being thus freed, in some degree, from the pressure of the atmosphere, moisture must be given out rapidly, unless some countervailing cause is in operation to check the decomposition of the atmosphere.

From the great variety in the motions of the wind, parts of the atmosphere will frequently be greatly expanded; and from like causes, there will frequently be an intermingling of cold and warm air, which will cause the formation of clouds, but rain will not always follow as a necessary consequence.

It is probable that the electric fluid has an agency, in producing a combination between vapor and the atmosphere, and in the formation of clouds, and keeping them suspended. From experiments made with the electric kite, by means of which the electric fluid may always be procured, in dry weather, and more rapidly in proportion to the height to which the kite is raised, it is evident great quantities of this fluid are contained in the atmosphere, and particularly in the upper regions thereof. It is also a fact, that when a cloud is passing, during the time the kite is up, little or no electricity is collected, unless the cloud is heavily charged with the electric fluid.

ARTICLE III.

Geological Researches in Missouri.*

BY DR. M. M. MAUGHAS.

I purpose giving, in this paper, a minute or specific account of the rocky strata of my vicinity, so far as researches running through several years, and my limited knowledge of geology will allow. Hither to, it appears to me, notices of the geology of our country, that have appeared in print, have been much too general to convey to any one, except the thoroughly initiated much useful information: and I think that it is only by describing specifically strata as they show themselves in particular localities, (observing always generalities in nomenclature that will embrace extensive areas) that leading strings can be placed in the hands of young aspirants, after this kind of knowledge, and the corps of enquirers in this interesting field of physical science can be recruited. The district of country for which the section is intended, is that portion of Callaway and Montgomery counties drained by Loutre and Au-Vaux rivers; the description of particular strata occasionally extends much further. Whether anything useful can be gleaned from this effort, remains to be seen. If attention can be called to the subject, and some one can be waked up that can and *will* do better, I shall be abundantly gratified.

DILUVIAN, DRIFT OR BOULDER CLAY.—The boulder formation overlies every other on the north side of the Missouri river, in this State, and indeed vestiges of it are not wanting on the south side of that stream, though the general opinion appears to be that it stops short there. A fine, very hard felspathic boulder lies in Jefferson city, besides some brecciated rocks of more questionable origin. And upon enquiry of members of the Legislature, who reside upon the Osage river, I learn that granite boulders are occasionally seen in that region.

The general appearance of this formation is that of a heterogenous mass of yellowish clay spread over the surface of the hard and regularly stratified rocks below unconformably; and studded throughout, both upon its surface and within its entire substance, with boulders or fragments of rocks, of foreign aspect, varying from a few pounds in weight to several hundred tons, all of them primitive or azoic rocks except the chert, which, in some places, is very abundant and very fossiliferous. The granite boulders present every shade of color and degree of hardness usual for that rock, but is usually of the kind termed syenite, when argil or hornblend take the place of mica: indeed no granite boulder has been seen by myself that contains mica, but some seem to be made up entirely of quartz and feldspar. Numerous boulders of greenstone are found, and many of dark ferruginous looking sandstone, the particles of which appear to have been stuck together by heat, and which contain iron ore boxes approaching a square form, which, when broken, contain very smooth

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yellow clay; also some boulders are found of a very hard breccia made up of angular fragments of flint containing fossils cemented by ferruginous clay and sand. Indeed there are perhaps few primitive rocks of much durability that are not found at some place or other in this clay. Quartz, milky, greasy and nearly black, basonite, porphyry, gneis, all the hard varieties of iron ore, geodes, and a certain hard stone, which the country people say can not be broken, and supposed to be saussurite, as that is said to be the most refractory of rocks.

The general appearance of this formation is attempted to be shown in the section, every thing there represented having been seen and examined by myself, in wells when being dug, and on the surface. Two places were carefully examined in Danville and vicinity, where the excavators exposed sand resembling beach sand regularly stratified as left by the waves: many other places have been mentioned to me, in all of which the sand rendered the cistern useless by drawing off the water. It is on this clay, the vast prairies of our country mostly lie, not that timber will not grow on it, though no kind grows so thriftily as on the soil resulting from the disintegration of the limestone in the hills,but because it is on this that grass obtains its maximum luxuriance, the annual burning of which destroys and keeps down the growth of timber.

The maximum thickness of this formation has not been ascertained. One hundred feet has been passed in the vain attempt to get water in some large prairies without getting through it. In small prairies it is generally about twenty feet thick. It can readily be conceived, why it should be thinner in these than in large prairies, when it is recollected that the entire formation has been removed by the action of rain and running water, except on the highest lands; hence broad flat prairies have suffered less from this cause, than small ones which are always more rolling. It is almost universally found, that where the clay has been most removed,the accompanying rocks lie the thickest, as the water removes the clay and leaves the more durable rocks. In some very large prairies a rock is seldom seen, yet by looking about, an observer can occasionally find a boulder protruding above the clay.

Chert, or silicious stones, commonly abound throughout this formation that are more or less charged with organic remains, some of the lumps being almost wholly made up of encrinites and shells. Encrinites, pentacrinites, very large and very small spirifers, penbrenites, pentamen, producta, orthis, teretratula, and numerous other shells, some of them exceedingly small, others large. It should be remarked, however, that in nearly every case the shell has entirely disappeared, leaving only the internal and external form or cast. In a few cases, the shells of spirifers, with the internal spiral arrangement, has been beautifully preserved in pellucid quartz.

It should be observed in this connection, that this clay is interspersed throughout with rolled pebbles precisely such as are found upon the seashore, varying in size from a dozen pounds weight to that of sand, and of every shade of color, from the most transparent quartz to red, green, blue and black pebbles, all very hard and smooth as though they had been frozen to the bottom or lower portion of ice near the shore; and carried away with it when warm weather broke

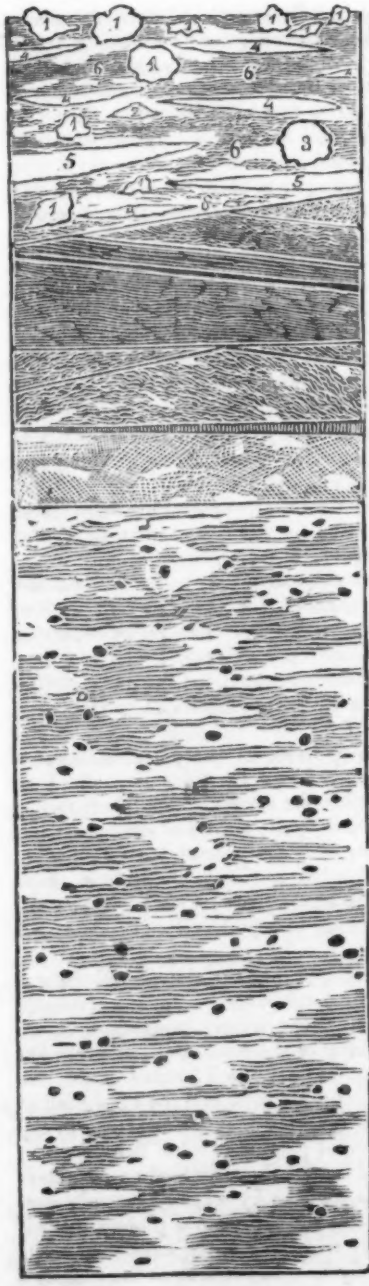
up the freezing and suffered the ice with the pebbles attached to move away. Under these circumstances, one would expect the ice would have attached itself also to recent shells at the bottom of shallow water near coasts: this may have happened: but those shells could not well have become fossilized in the boulder clay, but would not, and the clay could not retain even their form or impression. It has been said by some, that shells not fossilized have been found in or on this clay; but I think that they were muscle shells, that had been collected in rivers and carried to the highlands, to be used as food by the aborigines of the country.

The boulder clay appears to have been deposited upon the bottom of a shallow sea, and to have been conveyed hither by floating ice. The evidence of the first is to be found in the fact that this deposit rests sometimes on the fine grained sandstone, sometimes on the encrinital limestone,and occasionally on the coralline bed; the rocks above having been removed by the action of waves and currents in shallow water, so that the clay rests unconformably on them. The second seems to be proven by the impossibility of conveying gigantic boulders four or five hundred miles, and strewing them over a sea bottom by any other agency known than ice floes. It would seem that icebergs, loosened from certain cliffs, where they became charged with clay and rocks of definite kind, were afterwards stranded in particular places by coming in contact with bottom; because the hard rocks, in certain localities, are frequently of the same kind, and immediately adjoining, perhaps on the next acre, they are of a different kind. One locality may be seen strewed thickly with rocks of volcanic origin, as basalt and greenstone, many of which are in large balls, made up of concentric layers like the coats of an onion, another strewn as thickly granite boulders without mica. And still another with chert, highly charged with organic remains, of a date later than those contained in rocks below, and all these, sometimes repeated, may now and then be seen on a few hundred adjoining acres.

This clay is frequently passed through in digging wells, (though in some places in large prairies, one hundred feet has not reached the rock below), when sometimes the fine grained sandstone, sometimes the new encrinital limestone, and in one place, in Nine-mile-prairie, the coralline, hard, smooth, water-worn, and full of corals, was found at the bottom of a well underlaying the clay. The surface appearance is generally as above mentioned, different localities showing different kinds of rock in the soil; but by penetrating the clay vertically, we find the various kinds at different depths, thus showing that the deposit was gradual, and that various icebergs were stranded on the same place at different times, and thus the sea bottom was covered to some hundreds of feet with this miscellaneous formation.

The general color of the boulder clay is compounded of the shades between white and red, generally yellowish, but very variable in color, seldom dark or black: even the blackest hornblend boulder decomposes into redish clay.

We suspect, also, that much of our boulder clay came here in the form of stone, for upon penetrating the clay, we sometimes find portions of it imperfectly stratified, occasionally stratification is perfect for very short distances, as in sand, (see the section), but we now



BOULDER CLAY.

1. Boulders, red green, black & mixed.
2. Rotten boulder crushed by pressure.
3. Rotting rose colored granite with unrotted nucleus.
4. Semi-stratified clay of different colors.
5. Finely stratified sand, like beach sand.
6. The general mass of the boulder clay.

Fine grained sandstone & conglomerate.

NEW ENCRINITAL LIMESTONE.

Place of the bituminous coal.

CORALLINE LIMESTONE.

OLD ENCRINITAL LIMESTONE.

Variegated marlite and Jefferson building rock.

Prismatic, or coralline sandstone.

White sandstone.

A succession of marlite, limestone, arenaceous and argillaceous limestone; but no continuous sandstone, reach from the white sandstone to the water line of the Missouri river, a distance of near three hundred feet at Jefferson city. Some fine oolitic limestone, in very regular strata, occurs in the upper part, and some oolitic chert in the lower part of this series. Only a slight approximation to relative thickness is given in this section.

and then encounter a mass of clay not like that which surrounds it, but all alike. On one side of a large cistern, while in being dug, I saw a mass of clay, some ten feet in diameter, much redder and more homogeneous than that surrounding it, with a nucleus of rose colored felspathic granite in the center, about a foot in diameter. That this had been a boulder of about ten feet each way, was as plainly marked as if the whole rock had remained solid granite.

As regards the manner of depositing this clay, it appears to me, that taking the whole of the observable phenomena together, impossible to arrive at any other conclusion, than that it was deposited in water. How otherwise can we account for the seams of finely stratified sand that are occasionally met with, sufficiently extensive to carry off water from a cistern well. For it should be remembered, that persons that live on this formation have no springs, nor can they obtain water by digging wells in the ordinary manner; but they form cisterns by digging in the common form for a well, wall it up and running in water from above by means of a house roof or shed constructed for the purpose. In this way the cisterns, or wells as they are here called, hold water perfectly; except when in being dug a seam of stratified sand is encountered, and so well are well diggers aware that this will drain off the water, that, unless the sand is so near the surface, that they do not care for the water to stand higher in the well than where the sand occurs, the digging is at once abandoned and another site sought for at some distance, so as to avoid the sand. The glacial theory might account for the different kind of rock being found near each other in groups, because in countries where much upheaval has taken place, very different rocks are near each other on the same place, but cannot account for the great difference in the kind of rock found at different depths overlying each other in this singular formation.

What is meant by the glacial theory here, is the doctrine imputed by an American writer, whose notice I saw in some periodical, to Mr. Lyell and M. Agazis, to wit, that the scratches found on rocks, and the dispersion of boulders was due to the action of ice upon land; true glaziers; and that to support it, they had manufactured an ultra arctic climate for our hemisphere at a late period of its history. It is but justice to these very eminent gentlemen, to say that I have seen nothing of the kind from themselves, except Lyell's Hypothetical Climates in his principles.

The strongest argument to my mind, in favor of the glacial theory, is the scratches observed on mountain or hill sides, apparently made upwards. Whether these are entitled to the weight assigned to them, I can not say, having not seen anything of the kind, but have thought that by possibility the country may have been elevated since the scratches were made. We can all see how rock may be scratched at the bottom of a shallow sea by icebergs, such as we now see in the northern seas charged with rock: that portion of the floe heaviest charged with rock, of course, would hang below, and when considerable momen um should be given the iceberg by wind or oceanic currents, upon coming in contact with the bottom, would plough it up if soft; and if hard rock, as limestone, and the iceberg contained at its bottom a hard quartz or granite firmly held in the ice, as the glacier's

diamond in metal, the limestone would be scratched more or less in the direction of the wind or current, as has been observed in Ohio and elsewhere.

Further, I can not conceive how it would be possible for glaciers to remove much the largest portion of the fine grained sandstone, and a great deal of the new encrinital limestone, and carry the debris hundreds of miles (for it has not been left in this basin) and deposit the drift upon the sloping and denuded edges of the rocks. But the sea may have done it. And the natural effect of water in a shallow sea would be to denude such portions of its bottom as was most elevated, and carry the debris away.

The country attempted to be described in this paper, constitutes a small part of an extensive basin, extending from an anticlinal axis in Indiana on the East to a supposed axis of elevation crossing the Missouri river near Jefferson city on the West: and from the Ozark mountains on the South, to where the coal bearing rocks crop out, not very far from latitude forty-two on the North. Intermediately the rocks are nearly horizontal, not dipping from the anticlinal axis near Jefferson city to the Mississippi river, more than about three hundred feet in a hundred miles, and showing scarcely a fault or a fracture, so that they have never been more disturbed in position than they now are.

Fine Grained Sandstone.—The upper member of hard rock visible in our region, is the fine grained sandstone, which is only found occasionally lying upon, or filling depressions in the next lower, the new encrinital limestone. It is a fine grained sand rock, variegated, reddish, bluish and ashy white: sometimes minutely stratified, the strata occasionally differently colored. It is what is called sharp grit, that is the particles appear to be angular or very little rounded; hence it affords good grindstones. It is not micaceous at any point seen by me. The very minute sparkling particles sometimes seen on its surface, seem to be reflections from facets of quartz particles.

I do not know what its capacity may be for resisting high degrees of heat, but it looks like some fine sandstone I have seen. No organic remains have been seen in it, though it must be confessed that very little search has been made for them. It seems in one place to be capped by a light conglomerate consisting of rounded pebbles in a clay matrix, and light iron ore in small cubes. Again its place appears to be taken by brown oxide of iron in stratified masses like the sandstone, which is sometimes so arenaceous as to constitute a true ferruginous sandstone: but is frequently a pure brown oxide of iron.

This rock is admirable adapted to building purposes, being soft in the quarry, so as to be cut freely with the pick-axe, but becoming hard by exposure to the air, maintaining sharp angles when it is exposed in cliffs without much cracking. The diversity of color seems to depend upon the presence of iron in different degrees of oxidation. It sometimes becomes blacker upon exposure to the weather, and I think always redder by much heat. This is obviated in selecting for architectural purposes by choosing the ashy colored portions of the rock, which, indeed, predominates.

As before observed, this rock is only found in detached masses, filling depressions left in the rock below by movements of elevation

If it was ever continuous, it has been denuded extensively: most likely while it was being elevated, and while it was yet soft and wet, seeing that deep in the quarry it is yet soft, but very hard and unyielding when fully dry. The tumultuous action of the sea antecedent to the deposition of the boulder clay, may well have torn away most of this wet sand; and that this season of tumult did exist at that time, is proven by the fact that the place of this sandstone is sometimes taken by coarse conglomerate, made up of rounded pebbles, varying in size from a foot in diameter to coarse sand, in a clay matrix, which at Fulton is exposed in mural cliffs of about sixty feet in height. The boulder or eratic black clay reposes quietly upon it wherever the sandstone or its equivalents have been able to maintain their integrity. When they have been removed, the clay lies on the rock below.

New Encrinital Limestone.—Under the fine grained sandstone lies what I have denominated the new encrinital limestone. The circumstance of its underlying the sandstone renders it more general than that rock, as it has been less accessible to denuding operations. It occurs in strata of from one inch to four feet in thickness, generally 8 to 18 inches. It is more disposed to be cavernous than any rock we have, some stalactites in those caves that have been explored, are semitransparent; but they are generally opake, and plainly composed of concentric coats. This rock is subcrystalline, and made up in great part of broken columns of encrinites with many characteristic shells. It is, when of the best quality for architectural purposes, of a light sky blue color, rendered white by hammering. At other places it becomes more or less yellow, and whether this yellow color is owing to the presence of iron, magnesia or clay, I have not certainly ascertained, but am inclined to the opinion that it is clay, from the fact that when the stone is very yellow, it is generally soft, and disintegrates rapidly when exposed in cliffs. It is a superior building rock, being in layers of every convenient thickness, and retaining an uniform quality over considerable areas: at the same time it is not very hard, but is tough enough not to splinter or chatter, as it is called by workmen, under the hammer or chisel, at the same time it is very durable, being able to resist atmospheric vicissitudes a long time. It also is able to bear considerable ranges of heat, it being the best stone for fire-places, except the old encrinital limestone hereafter to be described, which last is the second rock below that now under description.

The encrinites in this rock are large and well preserved, some of them being an inch in diameter. They are mostly round but manifestly of different species; some, however, are spheroidal, though the latter kind are not numerous. This stone contains many shells in addition to its encrinites, not generally very well preserved and difficult to detach from the rock, many of them appear to be different from those found in the rock below.

This stone, in some localities, contains much chert imbedded in its substance, like flint in the chalk; being in rows conformable to the stratification, and nodular masses. In the stone under consideration these masses are much flattened, and are frequently whitish, sometimes chalky, but occasionally dark, now and then of variously colored

lamina arranged concentrically. Sometimes near a fourth part of the entire rock is made up of these cherty masses; but the singularity attending it is, that although the limestone is almost entirely made up of organic remains, none has been seen in the chert, except some pretty well marked impressions in this chert as it occurs near Fulton. This is directly opposed to phenomena observed in the chalk, and so far as I know to all analogy; organic remains or their impressions being most likely to be preserved in flint. A more diligent search may detect organic remains in this cherty matter at other localities, but this will not cure its want of anology, organic remains preserved in flint being in chalk the rule and here the exception.

This rock varies in different localities in thickness from ten to forty feet.

Coralline Limestone.—Immediately below the new encrinital limestone occurs the coralline bed, which is perhaps the most important rock we have on account of its considerable thickness, its great range, its organic remains and its mineral contents, our bituminous coal lying within it, above its middle. It is commonly an unsightly rock to the builder, being not always regular in its stratification, and decomposing into large hard lumps and flattened masses, thickest in the center on the hill sides, where it is exposed to the weather. These masses are commonly large corals, as astreas, (Madrepore) and clusters of turbinated Cyaophyla. In some places, however, as on Chorette, in Warren county, it occurs in regular strata, and of the whiteness of statuary marble, but of finer grain; though its uniformity of texture is so frequently interrupted by the presence of organic remains, which for the most part has been cemented into crystalized carbonate of lime, that it will not likely answer the purpose of marble, except perhaps for indoor ornaments. This stone varies much at different places in its lithological characters, though it is nearly always highly charged with organic remains, the bulk being made up of corals of many species, large and small. Shells abound of numerous species, spirifers, producta, orthoceratites, ammonites and strophomina abound, with a great variety of others not known to me. The shells are often in a state of excellent preservation, retaining their pearly lustre, but are very difficult to procure owing to the hardness of the rock in which they are firmly imbedded. Sometimes, however, the rock in certain localities is soft, and the interior of shells filled with hard carbonate of lime, in which event the stone is washed away by the action of water in rivulets leaving the coats of shells very perfect and abundant. Some of this rock is yellow, and destitute of shells; in this case it is called ochre, and is used as a lithic paint. In this rock a good deal of argillaceous iron ore is found, rather poor and often pyritic.

But the great deposit of value in this rock, is the bituminous coal which occurs in the upper portion of the bed. It has been observed, that where coal is found, the coralline limestone appears to thicken up at the expense of the beds below, especially the old encrinital limestone and Jefferson building rock, and perhaps of the prismatic sandstone and underlying white sand. The coal is overlaid by a few feet of black bituminous shale, and underlaid by shale or clay, more or less indurated, of various colours, often of considerable thickness

containing some crystals of sulphate of lime and iron pyrites, but is not thought to be bituminous.

The great variety of shells preserved in this rock presents to an eye, little practiced as mine in fossil conchology a perfect confusion: univalves straight, closely coiled, loosely coiled, or so coiled as that the parietal of the shell shall not quite touch, chambered and unchambered, with and without siphuncles. Bivalves without number, with some crustaceous; corals from the size of a hair to hemispheres of a hundred pounds weight, heaped promiscuously together, presents a labyrinth that the clue afforded by paleontology alone can unravel. It is somewhat singular that among the coal, the overlying shale and the underlying clay, I have not been able to find the impression of a plant or anything certainly of vegetable origin. True some specimens of coal upon the surface of deposition looks to be made up of charcoal from small sticks pressed together in confusion, but I have not been able with any glass in my possession to detect vegetable fibres in them.

The coal is the common bituminous coal, such as is found near St. Louis and in the Illinois coal field generally, and is not greatly different from that found at Pittsburgh. On the waters of Loutre (east), it is only two feet thick, while on Cedar (west) the same bed is eight feet thick; the county of Callaway intervening; in crossing which, from east to west, it thickens as above from two to eight feet.

The lithological character of the coralline bed varies from a very hard compact limestone, of texture adapted to the reception of a finer polish and splinting fracture, to a soft porous stone unfit for use. Its want of uniformity in texture and lack of free stratification, (the strata deep in the quarry frequently becoming united together, or cease to be stratified,) together with its rough exterior where exposed, and its known disposition to crack by heat, has given it a bad name among builders as a material, except for cellar walls and other coarse work. But it is our most valuable stone for lime, indeed there is no other rock in our country that will make good lime. There appears to be little or no difference in the color of the lime made from white and dark portions of the rock, the color being expelled by burning. Indeed some specimens of this rock is as black as Egyptian marble, and yet make white lime. The coloring matter in this case is probably bitumen, as all our fossiliferous limestones emit an odor of petroleum upon being rubbed together, and at the same time give the smell of clay upon being breathed upon. The yellow portions of this rock is, however, not used for lime burning.

This rock, like limestones in Europe and elsewhere, frequently becomes arenaceous. When it is sandstone, there are no shells in the sandstone itself, but by careful examination nodules of limestone may be found imbedded in the sandstone, rich in fossils characteristic of the coralline bed. This bed varies in thickness from fifty to one hundred feet, and perhaps more.

Old Encrinital Limestone.—This is a stone of no great thickness, underlying the coralline bed. It is frequently arenaceous and argilaceous in its lower portion, and variable in texture, being sometimes hard and again soft. Its upper portion appears to be made up, even in a greater degree than the new encrinital limestone, of broken

stems of encrinites; though they are so broken, and so thoroughly incorporated into the sub-crystaline texture of the rock as at first sight almost to escape observation. When exposed in cliffs, it is in a rotten crumbling condition, insomuch that the people call it a coarse sandstone. It sometimes forms low cliffs notwithstanding its crumbling condition, because its strata are thick, and it has a tendency like the cliff limestone of Ohio, Indiana and Wisconsin, to break vertically. It looks not unlike the true cliff limestone, and like it burns into lime with great difficulty, making a coarse yellowish lime; but upon being dissolved in sulphuric acid, no magnesian crystals are formed.

It is decidedly the best material we have for lining fire-places, indeed it bears far better than any limestone I ever saw, becoming harder by the heat usually raised in such places. This stone may be valuable for large buildings when thick strata are desirable, being, no doubt, hard deep in the quarries, for it appears to be the weather that has partially decomposed it in exposed places; but we use it only for lining fire-places, and for that purpose prefer the crumbly portions on the surface, which have long been exposed to atmospheric vicissitudes, and really know nothing of the rock as it occurs deep in the ground. Corals other than encrinites have not been observed in this rock, except a very few cyaophyla, it however contains shells not in a good state of preservation. They are not generally diffused through this as is the case with the rock above it, but seem confined to certain localities, where they are sometimes seen in great abundance, individually, but nearly all of one or two species. It is, however, interesting as being the first or oldest rock we have that contains them at all, at least so far as we yet know. In this rock the encrinites, though numerous, are small, and do not appear to be exactly of the same kind of those that occur in the new encrinital limestone.

I am inclined to think that most geologists would class this, the coralline bed, and the new encrinital limestone together, and call them one rock, because encrinites which are first seen in this, can be traced through the coralline bed, even where thickest, into the new encrinital limestone; though they are very rare in the coralline bed until near the upper part where they become more numerous and larger. But at the beginning of the coralline bed the encrinites of the old encrinital stone seems to have been cut off suddenly, scarce a trace of them appearing for a considerable distance. In fact the whole appearance to my eye seems suddenly to change lithologically and paleontologically, both at the beginning and end of the coralline bed. The old encrinital bed is from ten to twenty feet in thickness, and is sometimes wanting, as intended to be represented in the section.

The Jefferson Building Rock, or Argilatio Silicious.—Under the old encrinital limestone occurs about twenty feet, sometimes more, of variegated marlite containing more or less abundant strata of the Jefferson building rock: so called because it is very well developed at the city of Jefferson, and is the material of which the body of the State capitol is built. It is the argilatio silicious limestone of Dr. King. It is easily recognized when seen by its smooth uniform texture and fine grain, as well as by its beautiful even stratification, resembling in this respect the description of the English Lias—though unlike that it contains no organic remains.

As the name given it by Dr. King imports, it is composed of lime, clay and fine silicious particles; at Jefferson city it is found in very harmonious proportions, that is, the proportion of each is such that a rock is produced of great beauty and easily wrought. It is, however, not always thus constituted, being sometimes too hard and again too soft as silex or clay happens to predominate. At Portland it is too soft, containing an excess of white clay which renders the stone very handsome, easily cut with a knife or chisel, but too soft for durable architectural purposes. At Prairie-Fork it is too hard to be easily wrought, the hardening principle being an excess of silex, which renders it more durable than elsewhere. At Danville it contains an excess of lime, which whitens and hardens it, renders it too brittle to work well with hammer or chisel, and liable to crack by exposure to the weather. Some large lumps have been observed in this bed, perhaps not exactly belonging to the seams of the Jefferson building rock, which, it is thought, might answer for coarse statuary.

It is probable that the marlite of this bed will at some time be found useful in fertilizing our lands when they become exhausted by cultivation. Some of the seams are purely argilaceous, but commonly they effervesce freely with acids, and are quite indurated, but disposed to disintegrate readily upon exposure to the weather.

Prismatic Sandstone and Underlying White Sand.—The last mentioned bed rests upon the only sandstone of any extent in the district of country drained by Loutre river. The upper member of this sandstone I have named provisionally prismatic sandstone, from the circumstance of its vertical arrangement of grain, or its disposition to break vertically, and its entire want of stratification. To my mind's eye it presents somewhat the appearance of having once been a sea bottom covered with weeds or corals about the height of rye, but standing so thick as almost to touch each other, and then quietly filled to the top of the weeds with sand which ultimately took place of the vegetable fibre, and which was afterwards, in most places, consolidated by oxide of iron in solution. It is sometimes nearly white, in which case it is scarcely more than an incoherent sand, still showing the vertical arrangement, but commonly it is a hard red sandstone, overlying conformably a considerable thickness of white sand. It is from two to six feet thick, and owing to its hardness and manner of breaking it frequently stands in mural cliffs protecting the underlying sand. The sand of which it is composed appears to be grains of pellucid quartz slightly rounded by attrition, stained and cemented together by iron.

The grain is too coarse for grindstones except those of the coarsest quality, and owing to the rounded condition of its particles, it is not sharp enough. It is sometimes used for supports under the corners of cabins and underpinning for barns, for which it is a good material.

The white sand underlying the prismatic sandstone may be termed saccharoid, resembling a good deal fine loaf sugar. It is commonly white, and though sometimes hard when encountered deep in the ground, it disintegrates rapidly when exposed to the weather; and is frequently seen in cliffs under, and protected by, the prismatic sandstone, crumbling down and forming a talus of snowy whiteness at the foot of the cliff. It is made up of comminuted fragments of nearly

pellucid quartz slightly worn, and although as before observed, it is commonly white, there are localities where it is reddened and hardened by iron, in which event it becomes a pretty firm stone, used frequently for building. It is stratified thinly in places, in others the strata may be four feet thick; frequently no marks of stratification can be seen. A singular circumstance in relation to stratification is to be seen in this rock, indeed, it could not obtain in any but a sandstone. I mean a stratification oblique to the line of deposition. These lines of false stratification dip in different directions as the location varies where it is observed, showing that these strata were not produced by a general cause, but by such as were local and perhaps temporary in their effects.

Mr. Lyell has shown how such strata can be formed by sand moved by the force of wind, and I saw and made a drawing of similar strata in a sand bank in the Missouri river, produced by the action of the waves and current. An idea may be readily formed of those oblique or false strata by inspecting the section accompanying this, where an attempt has been made to delineate these strata as seen in the rock. They have already been formed in a shallow sea or on land, where the waves or wind could drive along sanddunes, and form these strata by rolling down sand on the leeward or protected side of the dunes; and as no organic remains have been found in it, the determination of its sub-marine or sub-aeriel formation may be somewhat difficult.

I am inclined at present, judging from a single location only, to think that the cannel coal is found immediately under this sandstone. The locality referred to is the celebrated "Cote sans des Sein mine," where a sandstone agreeing with this lithologically is seen overlying the bed, and as I know of no other such sandstone in the country, I suspect it is the stone under consideration. To be sure, some of the arenaceous limestones of Loutre may be sandstones on the Au Vase, but near the Cote sans des Sein mine, the coralline limestone is found at about the proper height above this stone to identify it as the white sandstone of Loutre. The prismatic sandstone was not observed on the Au Vase, but it was not looked for as I did not then know where to look for it, or that it was of any geological importance.

This is the only rock in our region that baffles the efforts of well-diggers, it is too hard to dig with the pick-axe, and too soft to blast advantageously; besides it cuts their tools badly.

If, as I suspect, the cannel coal lies under, and near this rock, it may lead to the discovery of that important fuel in places remote from Callaway and Cole counties, where it is now found. This rock is found under the entire country drained by Loutre, and has been traced into Warren county on Chorette, and along the Missouri river to near Pinkney, where it plunges beneath the water down stream. But as the edges of all the strata must curl up in the direction of the Iron Mountain, this rock probably shows itself again in the southern part of St. Louis and Franklin counties, where cannel coal may possibly be discovered. But this at the present time is wholly hypothetical, as no opportunity has occurred to me of examining that region.

This coal bed is probably the most extraordinary known. Some have thought that it might be a local deposit, or out of place and tilted on edge, which could account for its great apparent thickness at Cote

sans des Sein. But it is found on both sides of the little river Au Vase, and on both sides of the Missouri river, at a number of localities at about the same altitude; and is now said to be found further west in the county of Cooper. I have specimens from every known locality, and they are all alike, except one which differs somewhat from the others in appearance, though it is cannel coal, and does not differ in burning from other samples of that fuel. The lines of deposition in the bed at Cote sans des Sein are very indistinct, but appear to me to be horizontal. 'Tis true that the freest lines of parting dip at a very great angle, but I pretty well satisfied myself that they were lines of cleavage.

The coal in its appearance and burning resembles the best Scotch cannel coal; though it ignites easier and burns purer than that fuel. But the great characteristic of this bed is its extraordinary thickness and perhaps its wide difusion, the bed having been penetrated forty feet at Cote sans des Sein, without passing through it, or finding a seam, or any changes, except a supposed improvement in quality; and the bed having been already found in several counties, at great distances and on each side of the Missouri, and likely of the Osage river. While in Europe this kind of coal is only found occasionally, and as would appear rather an exception to the great bituminous formation, it is here the principal, only one seam of coking coal being found in this part of the State, and that only from two to eight feet thick, while the cannel coal seam is more than forty feet without a seam. The bituminous or coking coal has its place in the coralline limestone of the sketch, and the cannel coal about 150 feet below; probably just under the white sandstone of our vicinity.

Rocks below the White Sandstone.—Here we find a vast succession of stone, in thin strata mostly; but occasionally we meet with a thick stratum of very hard limestone, commonly containing numerous small cavities lined with calc. spar. Some of these thick strata would make a more durable building material than any stone in the country, if its hardness and its maintaining sharp angles for ages in the exposed faces of cliffs be a good test.

Near the upper part of this series oolitic limestone is found in place on the Dry-Fork of Loutre, and near the bottom, at Portland, occurs layers of oolitic chert. No organic remains have been found in this, which is much the thickest bulk of our rocks; or indeed, in any below the old encrinital limestone, unless by possibility some appearances in the oolitic limestone may be bones of fishes.

The whole formation in this section of country below the white sandstone may be called a succession of impure limestone strata, of various and uncertain colour and quality, argilaceous, arenaceous and some nearly pure limestone strata forms this group with occasionally thin seams of sandy marlite, colored red, yellow, blue and sometimes green.

In exposed faces of cliffs in this series frequently a great deal of the rock is brecciated, in other places no breccia can be seen. Commonly the included fragments are small, but sometimes they are a foot or two in diameter. The coarsest breccia observed consisted of flint included in coarse sandstone. Most of the fragments included in limestone are flint also. No one strata in this series appears to ex-

tend far; indeed to the observer it presents the appearance of having been formed in very turbulent times, and under circumstances inimical to animal life: therefore we are not surprised at finding no organic remains there. However, I saw some chain coral in sandstone on an ancient mound that had either been procured from this series, or brought from a considerable distance. And very lately I have seen at least two species of calenepora in sandstone on the bank of the Missouri river, below Portland, that I think must have come from this formation, though they were not in place.

The portion of country drained by Loutre and the river Au Vase is a nearly perfect plain, except where running water has scooped out ravines. The rocks, where they can be seen on each side of an intervale, even that of the Missouri, are the counter part of each other. There are, however, a few cases of want of uniformity of intensity of the elevating force, but only one fault has been seen, that of the city of Jefferson, and even that is not a fault certain, but may be a rapid cunner of the strata, part of which is concealed by overlying detritus. Our rocks when viewed on a small scale appear to be perfectly horizontal, but it is believed that a part of Callaway and Boone counties lie on an anticlinal axis: for from Callaway county east the rocks certainly dip two or three hundred feet in a hundred miles; because the coralline limestone containing our bituminous coal dip so much that from being nearly the highest rock in Montgomery, it comes half way to the water line of the Missouri river, at the west line of St.Charles county, and at the town of St. Charles it is believed to occupy the lowest uplands by its upper members, where it bears some coal, and at the chain of rocks near Bellefontaine it is seen plunging beneath the water of the Missouri river as you descend. Thus at Bellefontaine, (if I am right in my opinion of the stone seen there,) it would seem that the coralline limestone had disappeared below the water, but as I elsewhere remarked, the strata may curve up in the direction of the Iron Mountain. Accordingly we find that at the city of St. Louis it is again above the water line, and south of that place it probably obtains a still greater elevation in the direction of the Maremac river, and is again bearing coal.

If these conjectures be well founded, (for I acknowledge that out of Callaway and Montgomery counties they are little else than conjectures.) the coralline limestone may be the coal bearing rock throughout Illinois.

It has been thought by eastern geologists that the coal could not be below the encrinital limestone, because it was contrary to all analogy. But, although there is an encrinital limestone below the bituminous seam, (the old encrinital limestone) it is much less entitled to the appellation than the new encrinital stone, on account of the encrinites in the former being much less developed and much smaller than in the latter. Foreign geologists also think that coal should always be liberally accompanied by sandstone and conglomerates, when in point of fact although we have abundance of coal, we have but a single sandstone of any importance, and only an occasional trace of conglomerate exists at Fulton, where it is seen fifty or sixty feet thick at a single locality.

Now if it be true, as is intimated by travelers, that no rock containing organic remains is found at or near the mining country, in the vicinity of the Iron Mountain, and that near that place or at it, the granite becomes the surface rock, forming there an anticlinal axis, from whence the lead bearing rocks dip away south under the chalk and other members of the secundary series; and north under the coal and fossiliferous strata of the northern part of the State: it must be true that none of the lower fossiliferous rocks occur in this country: that the devonian, silurian and cambrian systems comprising such an immense thickness in Europe and in New York, is wanting here; or can it be that one coal is below other coal? If the granite ridge near the Iron Mountain be really granite in place, as I suppose it is, the thickness of rocks intervening between that and our protozoic strata are inconsiderable, and can be easily enough traced out by a competent geologist carefully examining the strata that will be found dipping north from said granite ridge to the Missouri river, and particularly those rocks denuded by the Maremac and its tributaries. When this is done, it may be found that the Devonian and Silurian which are in force as far west as Louisville, has thined out, and that the coal measures rest directly on the magnesian limestone and saccharoid sandstone found to underlie the blue limestone in Wisconsin; or that the cliff limestone, so rich in fossils elsewhere, has lost them here, and bears metallic ores in their stead. Be this as it may, it is a matter of great interest to determine the point, and to class our rocks properly, both to the man of science and to the practical miner. Much valuable ore has been rejected as worthless and thrown away by our miners for want of knowing what to expect to find among the rocks where they worked, and for want of some knowledge of the appearance of metals in their mineralized state. All this might and should have been obviated ere this by a scientific examination and classification of our rocks. The greater interest is felt in this matter because of the fact that our lead bearing rocks somewhat confuse foreign geologists who have looked at them, none having traced them to any fossiliferous strata, some refer them to the very lowest, others to the highest rocks that can possibly bear lead. In fact our lead bearing strata are generally looked upon as a geological enigma. It is believed that this enigma can be solved completely by examining with care a line from north to south of a hundred miles in length, which, considering the nearly horizontal condition of our rocks, would embrace but a small thickness of strata.

ARTICLE IV.

The World's Fair at New York.

AN ACT to appropriate money to aid in exhibiting the natural and other resources of the State of Missouri, at the World's Fair, to be held at the city of New York, in May, 1853.

Be it enacted by the General Assembly of the State of Missouri, as follows:

§ 1. That Luther M. Kennett be, and he is hereby appointed the Agent of the State, to collect from all parts of this State, specimens of the mineral, agricultural, mechanical and other productions of this State, to be forwarded by him to the World's Fair, to be held in the city of New York, in May, 1853; and for this purpose, the said agent shall take such steps as he shall deem necessary, to carry out the objects hereby contemplated; and to enable said Agent to discharge the duty hereby assigned him, the sum of four thousand dollars is appropriated out of any money in the Treasury of this State, not otherwise appropriated.

§ 2. The Auditor of the State is authorized to draw his warrant from time to time, in favor of L. M. Kennett, for such sums as he shall call for, within the amount of the appropriation hereby made.

§ 3. The said Agent hereby constituted, shall be required to make report to the Governor of this State, as to the manner in which the duties under this act are performed by him, so soon as practicable after his labors shall cease under this Act.

§ 4. This Act to take effect and be in force from its passage.

Approved, February 24, 1853.

Exhibition of the Industry of All Nations at New York.

THE UNDERSIGNED having been appointed by Act of the Legislature, agent for the State of Missouri, to take charge of and forward to N. York, such articles of the growth, product or manufacture of the State as it may be for her interest and advantage to exhibit at the Great Fair of Industrial Exposition about to take place in the city of New York, gives notices that he is prepared to receive and forward to their destination, free of expense, all articles of the character mentioned in the circulars published by the Committee at New York, and the auxiliary Committee of the city of St. Louis.

The cereal products and other Agricultural staples of our State, and especially its Mineral Treasures should be fully represented. The committee say "we are particularly desirous that our building should contain a complete collection of the various ores, which the active industry of our people is daily bringing to light, of the metals produced from them, in their various stages of development, and also of all other minerals. This includes coal, granite and

other similar substances, also chemical products more especially used in the arts. The ores should be accompanied by the rocks in which they are found, and if possible by plans and sections of the measures in which they lie. It would also be of great interest to exhibit, either by models or descriptive drawings, the different processes employed in the reduction of the ores and the manufacture of the metals. All specimens forwarded will be classified and arranged so as best to subserve the objects of the exhibition, and add to the general information and experience of our people. Paintings in frames, and sculpture, will be received and exhibited." For further particulars, reference is made to the circulars of the association, which have been generally published in the newspapers of the State.

The undersigned will receive and pay charges on all articles intended for the exhibition forwarded to his address, and will submit the same to the auxiliary committee in St. Louis for inspection. All such specimens as may be approved by the Committee will be forwarded to New York, at the charge of the State of Missouri, and proper means will be taken to insure their exhibition at the Fair in a suitable manner, and the disposition of them afterwards as the parties furnishing them may desire. To this end the Agent appointed by the Legislature will attend the exhibition, if the interest excited should furnish such an amount of her products as to do justice to the vast resources of our State. For full information and all particulars respecting the Exposition, address M. TARVER, Esq., Secretary of the Committee at St. Louis, or

L. M. KENNETT.

NOTE.—Individuals possessing knowledge of any valuable or rare mineral, and not intending to exhibit the same, will please correspond with Mr. Kennett or with Mr. Tarver, who will take steps to have it procured in case it should be deemed a proper object of exhibition.

ARTICLE V.

St. Louis and the Southeastern States.

MR. EDITOR.—I see but one link wanting in the chain to connect us with Charleston and Savannah on the Atlantic coast, and that is, between Cairo and Nashville. Col. Morrison and the Belleville folks intend to construct a road from that town to intersect the Illinois Central Road at Big Muddy,—then we are at Cairo. But Kentucky and Tennessee have delayed and hesitated in regard to this important link, though evidently the most important road in which they could have engaged: for Cairo is to be the most mighty grain and meat depot the world ever witnessed; as much greater than was ever found in Egypt of old in times of famine, as is the Father of waters greater than Cakokia creek. They seem to think their interest is connected with Indiana and Ohio, and

hence have been *talking* about roads from Nashville to Henderson and to Louisville—thence on to Cincinnati.

But what are the Ohio and its tributaries as arteries of produce and commerce, when compared with the Upper Mississippi, Missouri, Illinois and all their branches? All these streams will pour their millions into Cairo. On a road from Cairo to Nashville, thence to Charleston, hundreds of millions of produce would pass every year and find ready sale in Tennessee, Georgia, Alabama and the Carolinas; while all our cloths, silks, everything except the heaviest articles, would come quicker to us by this than anyother route; quicker *by weeks* than by New Orleans, and *by days* than through the Ohio. We should find a ready market in the States named for *staple* articles raised among us, also for fruit and vegetables; while the South would have leisure to grow and manufacture cotton, silk, sugar and tea for us.

Because we have always gone to Baltimore, Philadelphia and New York for our goods, and know little about the South; we think the southern Atlantic cities "*mighty far off*." But they are hundreds of miles nearer than New York or Baltimore. Take the figures—Charleston to Augusta 136½ miles—to Atlanta 170—to Chattanooga about 120, *i. e.* to the Georgia and Tennessee line, it is 102, and perhaps 18 to Chattanooga—thence to Nashville 150, railroad completed 116 miles, through in a month or two—thence to Cairo, the unsupplied link, say 150, and say 150 more to this city: whole distance from St. Louis to Charleston 875 miles; the distance is 13 miles less to Savannah, the commercial emporium of Georgia. Say we travel at 20 miles per hour: 875 by 20 gives 43 hours: we can go to the Atlantic in 48 hours, and have five for the exchange of mails etcetera. With a good boat hence to Nashville, you can reach Baltimore via Charleston, Wilmington and Richmond, 30 hours quicker than by the Ohio river and Baltimore railroad, though it is now completed through to Wheeling.

When the road from Cairo to Mobile is completed, that city will become a great out-let to our produce; but the Florida Cape and Keys are dangerous places for the navigator, and goods ordered that way will be exposed to destruction or very high rates of insurance.

When the road is constructed to Cincinnati, and thence to Wheeling, of course, the whole thing will be changed, and we can soon reach Baltimore, but it will be always require one more day's travel to reach the Atlantic, than by the southern route. Twenty-four hours "*is some*" in these days of progression, lightning speed and "spiritual" communication.

In conclusion, I ask if we can not, at St. Louis, set this ball in motion? The Nashville folks say they will build this road, and thus

supply this link; and more than once I have rapped their knuckles for their tardiness: yet no move is made. In the fall of 1851, I saw waggons in abundance hauling goods from Smithland, 150 miles nearly to Nashville!

The trade to the southern Atlantic cities and country would be worth more to us in *one year*, if we had a continuous road intersecting with them, than our Pacific road—a noble object, indeed, and well worthy our untiring efforts, will be in the first ten years of its existence. Suppose we send a committee consisting of our most influential and enterprising citizens to Nashville on the next steamer, to ascertain if this missing link cannot be found or manufactured? In the mean time let the memory of the Belleville folks be jogged a little to hasten on their road to the Central.

Another thought: the South by their late commercial convention in Baltimore, are determined to screw up their courage to a higher point in importing and exporting at their own cities, so as not to be dependant on such as reside on the north side of a certain line: now will not our efforts to have a direct communication with them, have a salutary influence, strenghten our friendship and encourage them to import for our immense wants in the West?

Will you allow another suggestion, before the cry of "copy, copy" addresses you? We are to be a great manufacturing city: our boundaries are to be enlarged and crowded in a great degree by a busy industrious population: we shall need ten years hence 50 to 100 thousand bales of cotton to be manufactured; for the South yet, though she has in operation about 200 factories, does not and can not consume a *tenth* part of her chief staple: this road will enable us to procure it at the cheapest rate and of the best qualities. If we buy their cotton, sugar and rice, and patronize their importations, we may reasonably expect they will purchase our flour, corn, pork, bagging, hay and fruits, beside other countless articles.

The interests of St. Louis were never linked with more important measures to increase her growth and prosperity than this very road. Who will interpose to prevent it? What rival interests can operate to produce enmity or create obstacles? We may confidently anticipate the warmest reception in Nashville and "material" aid; also from Charleston, Savannah, Augusta and scores of other towns along its route. Shall we hesitate? or shall we alone put this ball in motion, which will roll the wealth of the South into our city as does our mighty river its unmeasurable waters into the Gulph?

AMICUS.

JOURNAL OF INTERNAL IMPROVEMENTS.

Arkansas and Missouri Railroad.

CHALK BLUFF & FULTON R. R. U. S. GRANT. U. S. SURVEY, ETC.

Arkansas may be considered the pet child of the General Government. No other State in the Union has been favored with a more liberal grant of the Public Domain. No other State in the Union has been surveyed with such kind regard by the officers from Washington City. A singular coincidence, too, has occured between the United States Railroad Survey and the Grant of Lands by Congress for that State. From the northeastern to the southwestern corner of Arkansas the survey and the grant are on the same line, while the grant is extended to provide for branches reaching from the eastern to the western boundary all being made to concentrate at the capital, in the heart of the State.

The Survey and the Grant are on the same line, because the survey commenced in the State at the western base of Chalk Bluff, in township 22, range 7, east, at a point due south of St. Louis, and was continued almost in a straight line through Little Rock to Fulton, on Red River; and Chalk Bluff is on the line from Cairo, *via* Little Rock to Fulton; and the grant was made for the railroad on this last mentioned line.

By investigating the report of this U. S. Survey, made by Capt. Barney, which was reviewed in the *Western Journal & Civilian*, vol. 8, page 408, we find the length and the cost of this railroad through Arkansas; and by investigating the Law of the U. S., making this grant of lands to Arkansas, which law is published in this vol., page 346, and applying the grant to the length of this main trunk line, we find the amount of acres granted to aid in its construction; and then, by assuming that the land along the road would be worth $2.50 per acre, minimum price of lands reserved from the grant, we arrive at a demonstration that the land will be worth more than ½ the construction of the road will cost. And by assuming that the cost of equipment will be $3,000 per mile, which is a liberal allowance, we find that the cost of the road ready for operation, is only $2,921,101 more than the value of the land.

This problem is one of momentous importance for the consideration of capitalists, and upon its clear elucidation the "Cairo

and Fulton," or "Mississippi Valley Railroad Co's." bonds will be in demand, and the stock in the road at a premium from the beginning.

We have paid very particular attention to this subject during the six months just past, and will now, in few words, demonstrate the problem, starting with the most reliable basis, and proceeding to the conclusion with the most irresistible reasons.

The U. S. Survey, by Capt. Barney, above alluded to, is the basis of this calculation. The cost of the construction of the railroad from St. Louis *via* Little Rock to Fulton on Red River, 460 miles, with iron rails, 65 pounds per yard, is $8,316,874 (see report of survey).

The cost of construction of the portion of this railroad, within the limits of the State of Missouri, from St. Louis to Chalk Bluff, 175 miles, is found, on a careful examination and apportionment of the costs of the construction of the 3d division made by Capt. Barney, added to the costs of construction of his 1st and 2d divisions, to be $3,514,773. Therefore, by deducting the costs of construction of the Missouri portion of this railroad from the whole, the cost of construction of the Arkansas portion of this railroad is $4,802,101.

Next, as the length of this whole railroad is 460 miles, and the Missouri portion is 175 miles, the length of the Arkansas portion of this railroad is 285 miles.

In order to give an appropriate and definite name to the Arkansas portion of this railroad, which will apply with exact fitness both to U. S. Survey and the Grant of Congress; as township 22, range 7, east, through which the line of the Survey and the line of the Grant both run, *via* Little Rock to Fulton, is near the western base of Chalk Bluff, we will call the Arkansas portion of this road CHALK BLUFF & FULTON RAILROAD.

Chalk Bluff & Fulton R. R. is therefore, by the authority of the Agent of the Government, shown to be 285 miles in length; and the cost of construction of *Chalk Bluff & Fulton R. R.*, is, therefore also, by the same authority shown to be $4,802,101.

By referring to Law of Congress, making the grant of land to Arkansas and Missouri, we find the amount to be contingent mainly on the length of the road, "which lands," in the words of the 2d sec. of the law are definitely described as "being equal in

quantity to one-half of six sections in width on each side of said road." Therefore the quantity of land granted to the Chalk Bluff and Fulton Railroad is equal to six sections in width, in solid body, and to as many sections in length as there are miles on the road.

Now the Chalk Bluff and Fulton road, is, as above stated, on the authority of the Agent of the U. S., 285 miles in length. Therefore, by multiplying 285 and 6, we find that the number of sections granted to the Chalk Bluff and Fulton road is 1710; and as there are 640 acres in a section, therefore 1,094,400 acres are granted to the Chalk Bluff and Fulton road.

Here we will assume, what will, no doubt, be readily acknowledged, by the "knowing ones" in this business, as a reasonable position, that the lands granted are worth, on an average, $2.50 per acre, as they can be disposed of only after the route is located and "as the work progresses," and therefore the prospective price must be a necessary element in the consideration of the present value.

Taking then this position of $2.50 per acre, as the average value of the land for the purpose of being "applied in the construction of said road," and as the law declares they "shall be applied to no other purpose whatsoever;" it follows that the value of the 1,094,400 acres is $2,736,000.

But the U. S. Survey declares that the cost of construction of this road is $4,802,101, and therefore it follows that the value of the land is worth more than ½ the cost of the construction of the road by $334,950.

Referring again to the report of survey, we find that Captain Barney says:

"As the cost of construction of depots, station and engine houses, workshops, &c., must depend upon the nature and extent of the business on the road, no provision has been made for them in the above estimates."

The cost here mentioned is called the *equipment* of the road, and includes the costs of locomotives, cars, &c.—everything necessary for the practical operation of the road.

The *equipment* of main leading trunk roads, costs on an average, according to the opinion of the most experienced engineers, $3,000 per mile; and as the Chalk Bluff & Fulton road is consid-

ered, by the law of Congress, such a trunk road, and as its length is 285 miles, therefore the cost of its equipment is $855,000.

By adding the cost of construction to the cost of equipment, we find the road ready for operation at a Total Cost of $5,657,101.

But the value of the land granted to the road was proved to be $2,736,000; therefore the cost of the Chalk Bluff & Fulton Railroad, in complete running order, exceeds the value of the land granted for it by only $2,921,101.

We maintain the above as a demonstration of this problem, and challenge any caviller against our conclusion, to find any error in the above calculation, excepting only what would be produced by the addition of ¾ of a mile to the length of the road.

Such being the state of this enterprise, and the Cairo and Fulton Railroad Co. having been incorporated, last winter, by the Legislature of Arkansas; all the stock necessary for that Company to obtain is *two millions nine hundred and twenty-one thousand one hundred and one dollars*, in order to finish the whole work, and put it into operation from Chalk Bluff *via* Little Rock to Fulton.

Though the stockholders in the Cairo & Fulton Railroad may realize a *princely*, yet the State of Arkansas will as surely realize an *imperial* fortune from this enterprise.

Missouri is less fortunate than Arkansas, though none the less rejoiced at the brilliant fortune that is now realized, (and yet it can be scarcely realized) by her warm-hearted sister State.

The Missouri portion of the Arkansas & Missouri Railroad forks at Chalk Bluff, on the boundary line between the two States. The General Government applied the survey to one prong, and then applied the grant to the other prong. One prong extends from Chalk Bluff to St. Louis, 175 miles along the line of the survey, though the distance on an air line is not 150 miles, and may be about 160 miles *via* the Iron Mountain. The other prong extends from Chalk Bluff to the mouth of the Ohio, about 100 miles *via* New Madrid. Missouri is therefore on the horns of a dilemma, but she will take the dilemma by the horns, and will finish both prongs. A movement was made in the Legislature of Missouri, on the 19th February, to accept the lands granted by the United States to this State, on the 9th Feb., and to transfer the same to the Iron Mountain Railroad Co. for the purpose of building the

Missouri portion of the Cairo and Fulton Road. As the air line from the mouth of the Ohio to Chalk Bluff passes over the body of the Swamp District, the movement was made to build this road around the Swamp, and alternate sections of the Swamp lands were to be applied to aid in the construction of the road. Hon. Tho. Allen, President of the Pacific Railroad, and member of the Senate, introduced and passed a bill to this effect, on the 19th. But the House of Representatives had passed a bill granting the Swamp Lands to the counties, respectively, in which they were situated. And as the Legislature had resolved to adjourn on the 24th February, the House bill was pushed through the Senate, and the Senate bill was withdrawn from the House for amendment where it remained at the heel of the Legislature, with a multitude of other bills. The Legislature had, however, passed a General Railroad Law, providing for every emergency, and under this general railroad law the Cairo and Chalk Bluff road can be built; and it may be its rails will be laid, along a part of the route, on the bank of a canal to be dug to levee and drain the Swamp District, in connection with a system of internal improvement for Southeast Missouri.

The Iron Mountain portion of the Arkansas and Missouri Railroad will be quickly extended through South Missouri to the point of bifurcation at Chalk Bluff.

Various routes have been surveyed from St. Louis to the Mountain, and the one just concluded makes the center of the Mountain 82 miles from Hazel St., St. Louis. Modifications may be made reducing the distance to 79 or 80 miles, modifications dependent on selection of route with the view of best accomodation of the country. Grades are not over 45 feet per mile, and that only at few points.—Cost in operating order about $30,000 per mile.

Private and corporate subscriptions of stock in the I. M. R. R. amount already to several hundred thousand dollars. St. Louis Co. alone proposes to increase its subscription to $500,000, State Credit has been conditionally granted for $750,000, which, together with the additional private and corporate subscription reasonably anticipated, when wanted, from St. Louis and along the route, will amount to $2,000,000. The balance will be raised by the contractors and on the bonds of the Company.

The Iron Mountain is about 80 miles from Chalk Bluff, and therefore by this route, Chalk Bluff will be about 160 miles from St. Louis. And as by Capt. Barney's survey Chalk Bluff is 160 miles from Little Rock, Little Rock and St. Louis will be—about 320 miles—only ½ a day apart.

Memorial of Minnesota.

LOUISIANA AND MINNESOTA RAILROAD.

The cause of the Mississippi Valley Railroad is espoused with a bold spirit in Minnesota. One of its leading and influential advocates wrote us the following, under date

Mr. Henry Cobb, St. Paul, Min., Feb. 19, 1853,

DEAR SIR:—It affords me pleasure to be able to inform you that the bill of which I sent you a copy some days since, chartering the Louisiana and Minnesota Railroad Company of Min., has passed both branches of the Legislature, and is now a law. We have passed several other R. R. charters, but it appears to me that the one referred to is the most important. We expect here in Min. to connect your great southern R. R., at this place, with the Lake Superior R. R., for which we have a charter. We will need more means than can be raised in Minnesota to accomplish this, but we trust our southern capitalists will take sufficient stock in the Minnesota portion of the road as will enable us to go on with it.

There is now a grand struggle with eastern capitalist, to secure the trade of Minnesota; there has, during the present session of the Legislature been several eastern companies asking for charters to build railroads through Minnesota, such men as * * * * * * * * * * * * * * * * * and many others. Will you allow the East to secure the valuable trade of the Northwest? * * * * *

Yours, truly, GEO. W. FARRINGTON.

We would here state that St. Charles County proposes to take $100,000 in the N. M. R. R., and St. Louis *County* alone $1,000,000; $500,000 in the N. M., and $500,000 in the I. M. R. R. links in the chain from Louisiana to Minnesota. The I. M. R. R. is already surveyed, and the work rapidly progressing.

The following is the Memorial to Congress introduced to the Legislature of Minnesota, Feb. 4th, 1853, by Mr. Farrington, member of the Council, and author of the above letter.

MEMORIAL OF MINNESOTA.

TO CONGRESS, MEMORIALIZING FOR A GRANT OF LAND TO AID IN CONSTRUCTING THE LOUISIANA AND MINNESOTA RAILROAD.

To the Hon., the Senate and House of Representatives of the United States in Congress assembled:

The Memorial of the Legislative Assembly of the Territory of Minnesota, respectfully sheweth:

Whereas, the subject of connecting the Gulf of Mexico and the Territory of Minnesota by a railroad, is now deeply engaging the attention of the American people in the valley of the Mississippi river; and in view of the contemplated construction of such a road from New Orleans to the northern boundary of the State of Iowa, the Legislature of Minnesota, at its present session have passed an act incorporating the Louisiana and Minnesota railroad Com-

pany, for the purpose of building and constructing a railroad from a point on the Mississippi river, in the vicinity of St. Paul to intersect the aforesaid contemplated road; thus making a complete communication through the States of Louisiana, Arkansas, Missouri, Iowa, and the Territory of Minnesota, which is most desirable, and every year becoming more and more indispensable.

The vast Territory South of the Minnesota river lately acquired by treaty, from the Sioux Indians, abounds in rich and fertile prairie, in extensive forests, is well watered by numerous lakes, as well as from rivers and smaller streams, arising into the interior and flowing in the Mississippi and Minnesota rivers.

This part of the Territory is also supposed to abound in mines of lead and iron ore, which yet remain undeveloped; in connection with these natural advantages, the construction of the proposed road, offers increased inducements to the emigrant and settler seeking a home in the West. The rapid settlements, and the ready sale of the lands both upon the rivers and in the interior, whenever they are brought into market; the speedy conveyance of the mails, the transportation of men, munitions of war and provisions to the military posts upon the North-western frontiers, all commend the enterprise, most strongly to the attention and patronage of the general government.

In speaking of the advantages, we would in the same connection refer to the necessities of such a road, influencing as it would the most vital and important commercial interests of the entire North-west; and particularly the country immediately bordering on the upper Mississippi river.

In consequence of the increase of our population, and the necessity of furnishing facilities and inducements to those who are destined to emigrate to Minnesota; in consequence of the extensive and increasing trade carried on with the Indian tribes within our borders, and the commerce with the settlements of the Red river of the North; and in consequence of the anticipated construction of a railroad from Lake Superior to St. Paul, by which the extensive mineral productions, and the commerce of said Lake, will find a channel and outlet into the valley of the Mississippi; as well as the entire commercial interests of the Territory, an uninterrupted communication by railroad from the Territory has become absolutely necessary.

The obstacles that interrupt and suspend the navigation of the Mississippi river during many months of the year, cannot be overcome; from four to five months above the Missouri river the Mississippi is closed by ice; and during the summer and autumn, the navigation is frequently entirely interrupted and suspended, in consequence of the low water at the Rapids, and during every season the navigation of the river is attended with great destruction of property.

Your Memorialists deem it unnecessary to specify further in detail, the advantages that the general government, as well as the States and Territories west of the Mississippi river, would derive from or the necessities that require the accomplishment of such an enterprise.

Your Memorialists therefore respectfully urge upon your Honorable bodies, the importance of providing for a survey and location of a route for a railroad leading from St. Paul to intersect a road at such point on the southern line of this Territory, as shall be deemed advisable; and that a grant of land, of every alternate section for ten sections wide, on each side of the line of said proposed road, be made for the construction of said railroad.

Missouri and Iowa Railroad.

We find in a late issue of the "North-East Reporter," published at Canton, Mo., an able and spirited address from a committee appointed at a meeting of the citizens of Canton and Tully, on the subject of the Missouri and Iowa Railroad. The region through which this road is proposed to be located is represented as an excellent agricultural district, and remarkably favorable to the construction of a railroad. The direction of the route also conforms to the true system of trade and travel. But while we commend the public spirit of our friends of the Northeast, it is proper to remark that our knowledge of the resources of the country through which their road is proposed, is not sufficient to enable us to form a judgement in respect to its profitableness as a dividend paying enterprise. There are, however, inducements to the construction of public works of more importance than the dividends accruing from their operations; and if a railroad can be built by means raised in just proportions from the people to be benefitted—as by county subscriptions—the wealth and prosperity of a community may be greatly promoted even though the dividends should fall below the ordinary rate of interest; and we doubt not that such would be the case in respect to the work under consideration. We desire to see the resources of the country developed, and trust that Northeast Missouri will find no difficulty in raising the means necessary to the construction of a work calculated to develop the wealth of that interesting region.

Superior Social Advantages of the Mississippi Valley Railroad.

BY EDWARD WYMAN, OF ST. LOUIS.

There are many points of view presented in the great project of a railroad stretching out its iron arms far to the North and South of us, which are interesting to contemplate, and, which should not, we think, be altogether overlooked by us in our contemplation of the enterprise. We purpose, briefly, to allude to but one or two of these, leaving the detail of thought which they suggest to be carried out by individul minds, to whatever extent they may be disposed to exercise their reflective powers.

We have long been accustomed to contemplate, with great satisfaction, our position in this vast central valley of the Republic; and it is with reason too that we have indulged in bright anticipations of our future prosperity and importance, as we have seen by a single glance at our maps how fortuitous is our geographic location, midway, as it is, between those to great highways of the world, the oceans which wash our Eastern and Western shores. More especially, has this been the case since the tide of Emigration, rolling westward, has poured its enterprising multitudes into the vast fertile regions which lie upon the west of the Mississippi, redeeming them from barbarism; and California too, disclosing her hidden treasures, has invited a world to the reaping of her bountiful harvest. Such has been the course of events for the past few years, and such must it continue to be for years to come, that we may reasonably conclude the day is not far distant when our centrality will be not only geographic, but social and political—when we shall no longer feel as we have felt, that we are a mere out-post upon the verge of civilization, but are its central seat—not a mere extremity of the body politic but the very heart of it.

Hitherto the eye of expectation has been turned to but one quarter —the *East*—and we have felt that the elements of our commercial growth lay almost solely in that direction. But a new order of things has arisen. Already have we begun to feel the reflux influence of that vast wave of population which has dashed past us and diffused itself upon the far-off shore of the Pacific; and already too have we commenced the reaching out of a strong and mighty arm, which shall gather to us and carry past us the rich treasures of that prolific soil. Indeed, it is but recently, that we have really begun to feel where we are and what we are. Suddenly, and we may say almost unexpectedly, do we find ourselves neither in the East nor the West, neither at the North nor the South; but completely surrounded by the four quarters of the Republic, all of which not only *may* but *must* be made tributary to our ultimate wealth and pre-eminence among the Cities and States of the Union.

With such unexampled rapidity has this state of things been effected, and so great has been the apathetic security we have felt in our local advantages, our natural resources and the superiority of our geographic position and so restless and so strenuous too all the while has been the spirit of enterprise which is abroad in the land, that we have been almost surprised into a crisis in our condition—a

crisis demanding of us a more thorough appreciation of the spirit of the age, and a better understanding of the great popular agencies and instrumentalities, by which social and commercial prosperity are now to be retained and augmented. Casting our eyes about us, we have seen that human ingenuity and human industry have found substitutes for natural facilities, where such facilities do not exist; and that human enterprise and human perseverance have triumphed over natural obstacles, where such obstacles *do* exist; and though we have been slow to comprehend and feel the importance of the lesson taught us, we have at last, we trust, begun fully to realize its truths, and are awaking to the emergencies and necessities which press us from all directions. So far as these exist to the East or West of us, our attention has been arrested, the determination fixed, the resolve made and our energies roused to meet them. Eastward we have already projected and commenced the construction of railways, extending from us in various directions; and one, full of promise in the future we are now pushing forward to our western frontier, destined we hope not only to keep pace with the tide of emigration but to anticipate and outstrip it, and ultimately link us to the great concourse of our brethren who have already gathered, and the greater one yet to be gathered in that vast region, which lies between the Rocky Mountains and the Pacific. This is undoubtedly a wise policy, the fruits of which will ere long be matter of general observation and rejoicing. That there is yet to be not only a vast amount of *commercial* but also an equal amount of *social* good from these great undertakings, no one, who understands the civilizing and harmonizing potency of an easy and rapid transit from one section to another, can for a moment doubt. We are, perhaps, sufficiently awake to whatever interests we may have which lie in an Eastward or Weastward direction; and we rejoice in the increasing evidence that we are taking new views also of our relations to the North and the South, and are propounding the inquiry, how we may not only retain but may multiply the benefits to be derived from both.

This great project of a railway which shall unite the northern and southern extremes of the Mississippi Valley, novel and immature as it yet is, is nevertheless in our opinion the grandest conception and the noblest of its kind which has yet engaged our attention. It is one promising not only to us but to the country at large an incalculable amount of good, some of which we will attempt, though imperfectly, to make appear. We know that the great question in all enterprises of this nature is, "*cui bono?*" what good will it do? We know too that there are different kinds of good, and that among them the *pecuniary good* is almost the only one which receives the consideration of men; and we further know and admit, that in the very nature of things, it is the pecuniary good that must after all determine the expediency of commencing, prosecuting and completing such stupendous undertakings. This great work, now attracting the attention of many minds, if it is ever accomplished as we believe it will be, will be accomplished, because men have faith in the pecuniary good which is to result from it; because, in the speculative parlance of the times, it can be made to *pay*. That it will do this I think the evidence already spread before the readers of the Journal fully conclusive. It is another kind of good—a *collateral* good, to which we wish to call

attention; and if the question be raised whether such good can appropriately have place in our considerations upon the subject, we answer that we wrong ourselves, and do violence to the nobler sentiments of our nature, unless we *give* it place. There are undertakings which men combine to accomplish, and to which they cheerfully lend their aid, when no pecuniary good is to follow, and when no appeal can be made to the more sordid passion of a lust for lucre. When our arms are victorious in battle, and we celebrate with costly magnificence a great military achievement, we stop not to enquire whether it will *pay*. It would sully our patriotism to do so. When a great and good man dies, and it is proposed to perpetuate his memory in an enduring monument as a testimonial of our esteem and our love, we stop not then to enquire whether it will *pay*. We should debase ourselves to do so. And even in the proposal before us, so widely different in its character, although as we have admitted, the grand and leading inquiry must be, is there a pecuniary good in it, still if this question can be satisfactorily answered in the affirmative, it cannot be regarded as inapt or unprofitable to inquire further if there be collateral good also.

There is then, we think, a vast amount of this kind of good to be reasonably looked for from the construction of this great national highway—a good which every lover of social harmony and every individual desiring the stability and permanency of this Union will delight to contemplate. We base it upon the theory which we advance, and which, had we the space, we think we could fully establish that in a Republic, occupying such a vast territorial space as we do, the strongest intersectional ties are the great thoroughfares of human life and industrial products which assume a North and South direction. This theory arises from certain fixed and immutable laws of nature, and the consequent physical peculiarities and developments which characterize different portions of the earth's surface. In all ages of the world, a wide difference of latitude seems to have been marked by no greater diversity of soil, climate and productions, than is the contrariety of human pursuit, human sympathy and human sentiment. Congeniality of mind, community of thought, fraternal feeling and identity of social and political interest, seem all to have been limited by the same isothermal lines, and to have extended Eastward and Westward along the same parallel of latitude, rather than North and South along the same meridian. We believe that historic truth will justify the assertion that national antipathies and sectional prejudices have almost invariably settled, like the magnetic needle, in a North and South direction. Certainly the most bitter warfare of olden times was between nations widely separated in that direction, rather than the other; and the most bitter prejudices of modern times exist between communities whose juxta-position is on the same meridian and not on the same line of latitude. Even our own country may be instanced in exemplification of the theory. How much less of asperity of feeilng and collision of sentiment is there between the East and the West, than there is between the North and the South. That this is the case, none, we think, will deny; and that it is natural and unavoidable too we must also admit. But great and deplorable as this evil is, it is by no means of such magnitude as it might have been under a different structure and arrangement of the prominent features

of our territorial domain. It seems to us as though a special superintending Providence had so directed the configuration of that part of this Continent which was to become the abode of Republicanism, at least to preserve the bond of social Union. So completely are we surrounded on almost every side by the largest bodies of water, that our boundary is all but a continuous shore, and our country may almost be circumnavigated; while the general course of our great inland streams, our great mountains and valleys, most happily for us, is North and South. Certainly we have not half an eye to the beneficent arrangement of Providence if we cannot in this discover great good. It was an English not an American Poet who said—"Lands intersected by a narrow frith abhor each other; mountains interposed make enemies of nations that had else like kindred drops been mingled into one." The sentiment is no doubt just, applied to many countries but certainly not to our own. And yet, so much of general truth is there in it, that we are inclined to the belief that it would have been applicable to us, had the general direction of our mountains and our streams been Eastward and Westward rather than Northward and Southward. As it is, the bond of brotherhood has scaled the mountains and crossed the streams, and these have proved no greater barriers to the flow of fraternal feeling than to the transmission of the Electric current. But otherwise, who can say it would have been thus? Had our own Mississippi, for instance, instead of bisecting our country longitudinally from North to South, taken a direction from West to East, and had our two great ranges of mountains, the Alleghany and the Rocky, run parallel to it on either side, sending out tributaries to the North and South only to swell the current Eastward, who can say that it would not inevitably have become what it has sometimes been feared a Mason and Dixon's line was destined to be? Who can say that instead of being as we now are, a united, happy and prosperous people, we might not have been a discordant, factious, miserable one? Who can say that our energies and our resources would not have been consumed in border warfare, and that the flow of fraternal blood would not have resulted in unrelenting hostility and perpetual alienation? There is that in the records of our past history, and there is that still existing in the constituent elements of our social condition, which warrants the presumption that such *would* have been the case. Had we the power to analyze that combination of influences, by which in times of great peril and a threatened disruption of the Union, we have been saved from the horrors of such a catastrophe, we believe it would be found that there had been physical, as well as moral agencies conspiring for our safety and that among them was the fortuitous arrangement of the great natural features of our territorial surface. Along the borders of our own river, from one extreme to the other, there have been uninterrupted peace and good will; and in times of angry strife and impending ruin, the unanimity and harmony of this great range of States have exerted a powerful influence in rebuking and quieting discordant factions in other quarters. We believe then, most fully, that there is a fraternizing influence in this mighty stream, flowing as it does in a meridional channel. So fully do we believe it, that had we the power, by a single word, to check its rapid current and send it with all its burden of commerce

Eastward past the doors of our own kindred and our own native homes, or Westward to bear on its surface the multitudes who throng to the land of gold, we would do neither. We would rather say to it, flow on as by a wise and divine decree you were made to flow—flow on as ever, not only to gladden the land with your fertilizing waters and promote the interchange of the grosser commodities of commerce, but flow to gladden human hearts and to promote the interchange of friendly feeling, of kindly sympathies and of mutual regards, and thus cement as ever the bond of social Union.

Such are some of our views of the current course of the Mississippi. Of a similar character are those also which we entertain of the great project before us of a railway which shall run parallel with it. If there is any truth in the ideas we have suggested, they are equally as applicable to the road as to the river; and may be urged with a force as much greater, as the conveyance upon the one is more direct and rapid than upon the other. We look upon a railway under almost every circumstance as a great civilizer—a great pacificator. It furnishes so direct convenient and rapid means of intercommunication; it so far annihilates both space and time and brings widely separated communities into such close juxta-position that they know each other better and esteem each other more; it so multiplies the comforts and luxuries of life by commercial exchange, and so enhances the pleasures of life by the diffusion of knowledge, that it has proved and must ever prove one of the greatest of civilizers. It is not more literally a leveller of the mountains which lie in its path, than it is of the barriers of sectional prejudice which it breaks down, dissipating all antagonism of interests and producing in its stead a reciprocity of kind feeling and action. Indeed we cannot contemplate this vast net work of railways covering our land, grasping in its embrace the remotest corners of the Union, without the feeling that they possess as it were a mighty magnetic power, which is forever to prevent a disrupture of the whole into broken fragments, and counteract the evils that may have been apprehended from our increasing extent of territory.

If they do possess such a power (and we cannot think it altogether visionary that they do) then is it most devoutly to be wished that the many cities and towns scattered throughout our borders, which are so many marts of commerce or seats of social and political influence, may be indissolubly linked together by these iron bands, and the strength and integrity of our Union be symbolized in the compact. We have made but little allusion to the great question as to what will be the *pecuniary* good resulting from the prosecution of the specific enterprise under consideration. We have avoided it purposely, not that we regard this as unimportant or even secondary to such considerations as have been suggested; but because this is a question which necessarily must be, and has been discussed, and because we have felt that there would be a liability, in the eagerness of our search for this, to overlook what seems to us a greater amount of *collateral* good than often attaches to enterprises of this kind; and if this road has not already been proved a commercial necessity which must be supplied, it is hoped that those who are competent to do it will yet prove it, so that, although it be not positively a social necessity, the country at large may derive from it whatever of good it is peculiarly calculated to effect aside from its benefit as a commercial facility.

STATISTICAL DEPARTMENT.

TREASURER'S REPORT.

TREASURY DEPARTMENT,
Treasurer's Office, City of Jefferson, Jan. 7, 1853.

In compliance with the law regulating the Treasury Department, the undersigned has the honor to submit to the General Assembly the following biennial report for the two years ending 30th September, 1852:

[A]

Receipts in the first year.

1st quarter, 1850	$150,444 62	
2nd quarter, 1851	235,366 99	
3rd quarter, 1851	21,639 56	
4th quarter, 1851	72,834 88	
		$480,286 05

Receipts in the second year.

1st quarter, 1851	$ 63,734 13	
2nd quarter, 1852	256,211 75	
3rd quarter, 1852	37,043 46	
4th quarter, 1852	115,433 71	
		$472,423 05
		$952,709 10

The receipts into the treasury are composed of the following items, to wit:

Revenue	$622,747 09	
Seminary fund	50 00	
Saline fund	2,050 00	
State school moneys	162,626 21	
Sinking fund	1,772 30	
Internal Improvement fund	107,956 18	
Executors and administrators	5,783 31	
Tobacco Warehouse fees	1,751 25	
Act to enclose the Capitol, and for other purposes	35 95	
State Lunatic Asylum	3,054 91	
State stock dividends	44,881 90	
		$952,709 10

[B]

Disbursements in the first year.

1st quarter, 1850	$ 36,947 45	
2nd quarter, 1851	228,472 61	
3rd quarter, 1851	238,721 31	
4th quarter, 1851	63,731 68	
		$567,873 05

Disbursements in the second year.

1st quarter, 1851	$ 36,322 78	
2nd quarter, 1852	90,620 26	
3rd quarter, 1852	126,793 47	
4th quarter, 1852	92,889 77	
		$346,626 28
		$914,499 33

The disbursements consist of the following items, to wit:

Civil officers	$74,407 72
Costs in criminal cases	48,909 61

Special acts	13,181 65	
Assessing and collecting revenue	36,362 54	
General Assembly	58,851 67	
Copying Laws and Journals	1,425 84	
Distributing Laws and Journals	1,440 00	
County Revenue	2,054 97	
General Contingent Fund	7,743 53	
Publishing Decisions of Supreme Court	4,945 15	
Act to provide for the education of the deaf and dumb	2,040 00	
Printing Laws and Journals	8,960 12	
Militia Officers	606 31	
Act to provide for defending title, &c.	1,000 09	
Act to provide for paying expenses, subsisting troops, (Mexican war)	153 65	
Act concerning northern boundary line of this State	1,256 12	
Asylum for Deaf and Dumb	459 91	
Taking the Census	37 50	
Interests on State Bonds	225,545 80	
Principal on State Bonds	74,261 00	
Act to educate the Blind	3,000 00	
Reclamation of Swamp Lands	21,500 00	
Improvement of White River	8,000 00	
Contingent expenses of General Assembly	5,768 16	
do. Milita	60 82	
do. Elections	199 30	
do. State Treasurer	473 55	
do. Governor and Secret. of State	1,572 99	
do. Register of Land	1,008 24	
do. Attorney General	264 86	
do. Auditor of Public Accounts	501 92	
State School Moneys	129,517 96	
Road and Canal Fund	1,615 00	
Seminary Fund	1,220 44	
Internal Improvement Fund	122,212 65	
Executors and Administrators	510 49	
Military Fund	1,818 70	
Building the Capitol	286 07	
State Lunatic Asylum	51,325 09	
		$914,499 33

[C]

Balance in the Treasury 1st of October, 1852.

First Statement.

Balance in the Treasury October 1st, 1850	$676,721 71	
Deduct wolf certificates burnt by the committee in October, 1850	4,790 00	
	671,931 71	
Add receipts in two years, ending 30th Oct., 1852	952,709 10	
		$1,624,640 81
Deduct disbursements in the two years ending 30th October, 1852	914,499 33	
Deduct amount of interest on State bonds ordered by a resolution of the General Assembly, approved February 6th, 1851, to be placed to the credit of the Treasurer	260,668 79	
Deduct deficit of Peter G. Glover, dec'd, late State Treasurer	33,488 75	
		1,208,656 87
Balance in the Treasury 1st October, 1852		$415,983 94

[D]

SECOND STATEMENT.

Receipt given by A. W. Morrison to the committee and to the administrator of Peter G. Glover, dec'd, late Treasurer, as follows:		
In cash	$179,177 77	
In deposits in Bank	84,564 84	
In State bonds and interest thereon	19,869 59	
In wolf-scalp certificates	1,417 00	
State Land Office certificates	2,035 71	
Auditors warrants	548,391 91	
Add amount received from November 13th, 1851, to September 30th, 1852	457,779 00	
		$1,293,535 82
Deduct amount of warrants redeemed by Peter Glover, dec'd, late treasurer, and receipted for by A. W. Morrison	548,391 91	
Deduct amount of warrants redeemed by A. W. Morrison, from 13th Nov., 1851, to Sep. 30th, 1852	329,159 97	
		$877,551 88
Balance in the treasury 1st October, 1852		$415,983 94

The balance consists of the following funds, including the balances due the same on the 1st October, 1850.

Building the capitol	$509 45
Road and Canal Fund	917 12
State School Moneys	38,623 47
Mormon, Iowa, and other wars	864 61
State Tobacco Warehouse, [fees]	5,807 25
Seminary Fund	50 00
Sinking Fund	4,517 00
Saline Fund	5,835 31
Improvement of Main street	1 07
Internal Improvement Fund	29,904 17
Executors and Administrators	9,676 08
Act to enclose the Capitol, and for other purposes	36 65
Military Fund	102 04
State Tobacco Warehouse Bonds, [premium]	36 25
State Lunatic Asylum	599 19
State Stock	44,881 90
Revenue Fund—composed of Cash	73,986 79
Deposites in Bank	173,916 79
Wolf certificates	3,813 50
State Land certificates	2,035 71
State bonds and Interest thereon	19,869 59
	$415,983 94

The foregoing is a statement of the condition of the Treasury for the last two years, commencing 1st October, 1850, and terminating 30th September, 1852.

The following statement will exhibit the condition of the Road and Canal fund, which the Treasurer, by an act of the General Assembly, entitled "an act concerning the Road and Canal fund, approved March 7th, 1835," is required to submit in his biennial report.

[F]

Condition of the Road and Canal Fund.

Balance in the Treasury, October 1st, 1850	$2,532 12

Deduct apportionment made in January, 1850, and paid to the following counties in the last two years, viz: Cape Girardeau, Dodge, Harrison, Jasper, Laclede, Madison, Reynolds, Scott, Wayne and Ripley, to each $161.50	1,615 00
Balance in the Treasury, 1st October, 1852	$917 12

Counties to which apportionments are due.

St. Louis and Shannon counties are each entitled to the last apportionment, viz: $161.50	$323 00
Ripley county is entitled to apportionments previous to October, 1846	591 13
Surplus in the Treasury over the several apportionments	2 99
Balance in the Treasury, 1st October, 1852	$917 12

The foregoing tables contain a full statement of the amount of receipts into and disbursements from the Treasury in the two years ending 30th September, 1852.

There has been received into the Treasury from the 1st October, 1852, to the 1st December, 1852.

Of Revenue	$110,915 47	
Of Special Funds	1,880 75	
		$112,796 22
Warrants have been redeemed in the same period which were drawn on Revenue Fund, amounting to	$64,449 28	
And on Special Funds	2,541 02	
		66,990 30
Balance in October quarter 1852		$45,805 92

It will be observed by reference to tabular statement F. that there has been no Road and Canal Fund received in the last two years. Since the 1st of October last, however, there has been received of that fund $39,405 84, which amount has been apportioned amongst the several counties of the State as required by law, giving to each county $375.

In the balance as reported in tabular statement E, is included $19,869 59 of State bonds with interest. There is also included in said balance $2,035 71 of State Land Office certificates, which the Treasurer by "an act for the relief of persons who have bought State Lands which have been rejected, approved March 9th, 1849," was required to receive from the several State Land Receivers.

I suggest that an act be passed authorising the Auditor to issue warrants for the above amounts, that the vouchers may be filed in the proper office.

Respectfully submitted

A. W. MORRISON, State Treasurer.

Population and Revenue of Missouri in 1852.

Counties.	Population.	Amount of Revenue paid in 1852.
Adair,	2,977	$506 46
Andrew,	9,244	3,719 75
Atchison,	2,040	506 91
Audrain,	3,845	1,232 68
Barry,	4,382	480 44
Bates,	1,819	425 39
Benton,	4,613	1,027 48
Bollinger,	3,793	581 31
Boone,	14,565	6,070 98
Buchanan,	13,990	5,937 78
Butler,	1,717	224 98
Caldwell,	2,555	.....
Callaway,	14,149	4,190 27
Camden,	2,419	454 19
Cape Girardeau,	10,920	.....
Carroll,	6,188	2,017 18
Cass,	4,860	2,100 83
Cedar,	3,267	651 13
Chariton,	7,618	4,460 35
Clark,	5,572	2,126 28
Clay,	8,484	6,401 94
Clinton,	4,318	1,626 41
Cole,	5,597	2,347 15
Cooper,	12,742	6,154 72
Crawford,	5,931	1,166 81
Dade,	4,216	906 48
Dallas,	4,016	695 45
Daviess,	6,059	1,788 62
Dent,	2,001	364 05
De Kalb,	2,689	508 24
Dodge,	599	63 48
Dunklin,	1,240	178 36
Franklin,	11,193	4,608 78
Gasconade,	5,749	1,086 61
Gentry,	4,198	.....
Greene,	12,291	2,584 25
Grundy,	3,260	870 80
Harrison,	2,608	.....
Henry,	4,340	1,711 67
Hickory,	2,709	515 98
Holt,	4,355	964 29

Population and Revenue of Missouri in 1852.—Continued.

Counties.	Population.	Amount of Revenue paid in 1852.
Howard,	14,070	$9,224 30
Jackson,	13,914	7,009 43
Jasper,	4,632	840 06
Jefferson,	9,090	2,536 30
Johnson,	9,410	2,660 86
Knox,	2,876	1,381 80
Laclede,	3,393	490 36
Lafayette,	14,511	1,016 66
Lawrence,	5,903	1,024 78
Lewis,	6,586	2,859 11
Lincoln,	10,461	3,017 98
Linn,	4,514	1,244 66
Livingston,	4,457	.....
McDonald,	2,719	284 05
Macon,	7,517	.....
Madison,	5,581	1,720 78
Marion,	12,000	.....
Mercer	3,336	422 12
Miller,	3,919	772 06
Mississippi,	3,285	1,574 69
Moniteau,	5,572	1,535 66
Monroe,	11,285	4,069 40
Montgomery,	6,064	2,090 21
Morgan,	4,512	1,413 22
New Madrid,	3,678	1,651 90
Newton,	4,336	972 39
Nodaway,	2,279	579 60
Oregon,	2,018	225 11
Osage,	5,914	1,439 59
Ozark,	3,708	.....
Pemiscott,	1,308	245 16
Perry,	6,406	1,512 10
Pettis,	5,585	1,691 53
Pike,	13,277	6,028 91
Platte,	16,486	9,678 12
Polk,	6,372	1,432 91
Pulaski,	4,202	757 23
Putnam,	1,852	175 50
Ralls,	6,006	3,972 00
Randolph,	9,917	3,449 81
Ray,	8,721	4,300 27
Reynolds,	1,949	245 86

Population and Revenue of Missouri in 1852.—Continued.

Counties.	Population.	Amount of Revenue paid in 1852.
Ripley,.....	2,514	377 91
St. Charles,.....	12,492	3,368 66
St. Clair,.....	3,849	1,118 36
St. Francois,.....	5,703	1,711 59
Ste. Genevieve,.....	5,443	1,524 68
St. Louis,.....	121,853	88,754 79
Saline, ...	9,096	4,249 88
Schuyler, ...	3,447	484 36
Scotland, ...	5,178	1,047 43
Scott,.....	3,420	1,073 17
Shannon, ...	1,346	.....
Shelby,.....	4,396	2,205 13
Stoddard,.....	4,476	610 65
Stone, ...	1,648	174 07
Sullivan,.....	3,360	620 81
Taney, ...	3,082	403 15
Texas,.....	2,724	.....
Vernon,.....	2,517	731 00
Warren,.....	5,776	1,741 59
Washington,.....	8,162	2,581 53
Wayne,.....	3,847	609 37
Wright, ...	3,968	521 76
Total Female,.....	303,825	
Total Male,.....	331,109	$270,410 25
Total free persons of color,.....	2,526	
Total Slaves,.....	87,207	
Total Population.....	724,667	

THOMAS ALLEN,

President Pacific Railroad.

The subject of this sketch is a native of the town of Pittsfield, Berkshire county, State of Massachusetts. His grandfather, the Rev. Thomas Allen, was the first settled minister of Pittsfield, and founded the first congregational church there, and performed a laborious and active service at the head of his congregation for 46 years. He was the Berkshire clergyman described by Edward Everett in his life of Gen. Stark—[Spark's Lib. of Am. Biog., p. 97]—and is remembered for his zeal in behalf of the liberty of the colonists, and rendered conspicuous service on various occasions during the American Revolution. The house in which he lived is still standing on the old estate purchased of the Indians, and is now the property of the grandson, and there the grandson Thomas was born August 29, 1813. His father, Jonathan Allen, was one of twelve, rather remarkable sons. During the war of 1812, he was assistant Deputy Quartermaster General, was for many years a Senator and Representative in the State Legislature, and at the time of his death, in 1845, postmaster of Pittsfield. He was perhaps the first importer of Merino sheep into this country, having, in 1809, made a selection in Spain himself. The Rev. William Allen, now a resident of Northampton, Mass., and for many years President of Bowdoin College, Maine, is the only one left of the twelve sons of the grandfather. The mother, now living, Eunice Williams Larned, is a daughter of Col. Simon Larned, and a sister of the present Deputy Paymaster General U. S. A.

Thomas Allen, the subject of this sketch, is one of a family of fourteen brothers and sisters, of whom seven are now living. One brother, George, was an officer in the army from 1818, and died a Lieut. Colonel at Vera Cruz, Mexico, at the close of the war.

Thomas was first sent to school at the village academy, on the green, scarce two hundred yards from the old mansion. Subsequently his father removed to a farm in the eastern part of Pittsfield, in the valley of the Housatonic river, and directly at the base of the Green Mountain range. Here Thomas was sent for several years to an ordinary district school—schoolmistress in the summer, and schoolmaster in the winter. Here it was that Thomas formed a taste for rural pursuits and pastimes which now is a marked characteristic and will probably adhere to him through life. His father's meadow in "haying time" was his Arcadia. The speckled trout played in the little brook, and the woodcock nestled in the alders. He learnt alike how to take them, and how to turn a swarth and make a hay cock. No boys excelled him in the use of the angling rod and fowling piece. His father kept a great variety of stock, and amongst the rest a few hounds. He became very fond in the winter season, whenever Cicero and Virgil could spare him, of joining his father in a fox hunt. This was an exciting sport, and on one occasion his persevering zeal lead him so far from home that the fatigue brought on a very serious attack of liver complaint, which affected his health more or less for many years.

His father having determined to give him a liberal education, sent him for final preparation for college to an academy in Amherst, which he disliked very much, and stayed but a month. Afterwards he was sent to the Berkshire Gymnasium, in Pittsfield, then under the charge of Rev. Chester Dewey. While there he roomed for a while with one of his tutors, Mark Hopkins, now the distinguished President of Williams College, and was in all respects under good influences and good instruction. The students published a little weekly paper, called the "Mis-

cellany," which contained the best of their compositions. Of this Thomas was elected the editor.

When sufficiently advanced in Greek and Latin, he was sent to Union College, Schenectady, Eliphalet Nott, President. His examination was satisfactory, but his age was insufficient, the rules of the college requiring that the age shall not be less than 16. On his promising, however, that he would be of the requisite age before the regular term commenced, he was admitted. His college life was not distinguished by anything remarkable. He was always in good standing as a scholar, and showed himself capable of performing every task, and of acquiring his lessons with more readiness than most students. During the senior year he was under the special instruction of Dr. Nott, and he has said that he remembers those teachings as having been of great advantage to him through life, and accordingly holds his old teacher in love and veneration.

Having left the college some few months before commencement, to enter a law office at Albany, he received no award of honors from the faculty, but the students of the Philomathean Society elected him to deliver to the class a farewell address. This duty he performed. He graduated as Bachelor of Arts in July, 1832. He entered upon the study of law in the office of Mr. James King, of Albany, since deceased, but remained there only until the fearful approach of the cholera of that year.

Some family misfortunes at this time involved much loss of money, and there was now a crisis in family affairs. The oldest was in the army [there seems to have been a representative of the family in every war of the U. S.]. The next should go into a government office, and the next to a small farm. The course of Thomas is best shown by the following extract from a letter to a friend:

"My good father said to me: 'I have given you an education; here are $25; it "is all I can do—go and take care of yourself.' I took the boon with gratitude, and "with a full determination to return it with interest, and to repay, if possible, the "care of my always kind parents, I started for the city of New York. On the "evening of the 18th October, 1832, I took lodgings at a Boarding House, at the "corner of Wall street and Broadway, now occupied by the new Metropolitan "Bank. My mind was not a little concerned in deciding upon the course of life. "I was at the heart of a great city, and often felt a sense of utter loneliness and "desolation. With a little purse that must inevitably be exhausted in a few weeks "at most, what should I do? After revolving several plans in my mind, I resolved "to persevere in the profession of the law, as I originally contemplated. Knowing "that I had to work my passage into the profession, I kept a vigilant eye out for "employment In a few days I discovered in the Evening Post an advertisement "of "a clerk wanted" in a lawyer's office. I lost no time in repairing to the hoped "for haven. Alas! there had been many applicants, and the place was already "filled, and the young man who filled it, looked out upon me with rather a patron-"izing air. I resolved, notwithstanding, to present my letters of introduction, and "finally obtained permission to remain in the office and read the books, paying for "the privilege in clerical labor. Happily for me, I was not long in discovering "that my fellow student who received the salary, soon had a sinecure. My ne-"cessity, if nothing else, drove me to industry, and with better chirography, I soon "won much of the business of the office, and I was firmly installed in a clerkship "in Hatch & Cambreleng's office, Wall street, with a salary of $300 per an-"num. In this situation I continued for three years, learning the practice of the "law from the labors thrown upon me, and employing my leisure moments in "studying the books. My pay was so small that I had to economize closely to "get along. A part of the time I roomed in an attic apartment with a respect-"able journeyman jeweller, in Duane street, but though often for weeks without "a penny in my pocket, I did not repine. Hopefully persevering, I increased "my little income somewhat by copying for other members of the bar. Some of "my letters, at this time, show an occasional trace of despondency, and sometimes "a little disgust with the dry study of the law, which was not half so pleasant to "me as holidays in the country. I was not satisfied whether New York was my

"proper place, and frequently had dreams of the West, and even of New Orleans. "In 1833, President Jackson visited New York, followed a day or two after by "the celebrated Indian Black Hawk. I wrote an account of the visit of those "chiefs, describing their personal appearance and the unusual scenes following "them in the city. I wrote now and then a comment or a criticism upon passing "events, which I sometimes published in the newspapers. But my time was too "much occupied in obtaining a living, to indulge my literary taste. Seeing that I "had an editorial turn, a bookseller with whom I had become acquainted, joined "me in a plan to publish the first penny newspaper ever published in America. "While in the country completing his arrangements, others got wind of the de- "sign, and before the plan could be executed, had issued a paper upon that plan. "Others quickly followed. I then gave up the idea, and in September, 1834, be- "came the editor of the Family Magazine, a monthly illustrated journal of useful "general intelligence, J. S. Redfield, publisher. I edited this magazine in such "moments as I could get from my law pursuits, for about a year and a half. The "Magazine contributed materially to my support. About this time I was engaged "by the principal law bookselling house of New York, to assist in compiling a "digest of the decisions of the New York Courts from the earliest times down to "that period. Upon this work I labored over a year. For my share of labor in "that work, I received a small but select law library."

Up to this time Thomas Allen seems to have struggled with a brave heart and resolute will, without yielding to his particular partiality for country pursuits, to overcome the difficulties of his position. His labors at this time were useful to others as well as to himself. The Family Magazine seems to have flourished in his hands, and some of his writings for it have since been republished, among others by Sears in his pictorial volumes. The digest of the decisions of the courts was published and republished, and is now the standard digest of New York, known as Clerks' Digest.

His first appearance before the public as a speaker was in 1834, when upon invitation he delivered an address on temperance before the Water Street Temperance Society of his native town. In 1835, at the age of 21, he, after an examination by the judges, was admitted to the bar of the Supreme Court of New York. One of his first employments, after open- ing an office, was in a collecting expedition in mid-winter through the State of New York, and along the south shore of Lake Erie, as far west as San- dusky. This undertaking was successfully accomplished, mostly on horse- back, and while the snow was deep, and the weather severely cold. It was during the same year, that he received from his Alma Mater the degree of Master of Arts, and was also elected an honorary member of the New York Phi Beta Kappa Society—an honor which was then considered a high certificate of good character and scholarship. In 1836, during the canvass for the Presidency, when Mr. Van Buren was a candidate to succeed Gen. Jackson, he complied with an invitation to deliver an oration on the 4th of July before the Democratic Republicans of his native town. In this address which was published, he fa- vored Gen. Jackson's administration, and the election of Mr. Van Buren. He also made two or three other addresses in the same cause during that canvass. His grandfather, father and many of his early friends having been of the Democratic Republican school, from the time of Jefferson down, he naturally came to the same politics. It was during the same season, that he was called upon by Gen. E. W. Ripley, the well known hero of Lundy's Lane, and then in Congress from Louisiana, and urged by him to remove to Louisiana, offering to resign him his law office and practice. Gen. Ripley was an uncle by marriage, and Allen accepted the invitation, and repaired to Washington, and spent the short session of Congress with him. During his stay there he was offered an office in Louisi- ana by the Sec. of the Treasury, Mr. Woodbury, which he declined. He em-

ployed some of his leisure moments in writing descriptions of scenes in Washington, which were published in some of the northern papers. This was the closing session of Gen. Jackson's administration, and the session of the expunging act. The U. S. Bank having been killed, the organs of the administration seemed to be turning against the State banks, and some of the writers advocated the destruction of all banks. The Globe was thought to have a strong proclivity that way, and by its course created considerable dissatisfaction among the friends of the administration. Some of these gentlemen thought it judicious, if possible, to infuse a little different spirit into that journal. Allen's letters had attracted some attention, and his authorship had been traced out. This led to a visitation from some of the friends of the administration above referred to, and an invitation by them to go into the Globe as an editor. This he declined unless he could control the paper, which not meeting the views of the proprietor, ended the negotiation. During this winter he became acquainted with Gen. Jackson, and most of the leading public men of that day. In the spring of 1837, after witnessing the inauguration of M. Van Buren, his uncle fell into such a state of mental and bodily health, that he was induced to postpone his visit to Louisiana, and to accomodate his uncle by making a tour on horseback over the military tract of Illinois, in order to inspect a large number of scattered tracts of land which his uncle held there. This was the occasion of his first visit to St. Louis. After a month's travel through the country between the Illinois and the Mississippi, he reached Peoria. Here he first heard of the suspension of specie payments, and of the universal catastrophy, which had fallen upon the country. Here he also found letters from distinguished statesmen, urging him to return to Washington, to publish a new paper. He returned to New York, where a meeting of many leading friends of the enterprize took place, and yielding to their solicitations, he wrote and published his prospectus for the publication of "The Madisonian," and immediately gathered together his press, material and workmen, and started for Washington. His enterprize awakened jealousy and enmity, and was attacked in advance. His first paper was issued on the 16th of August, 1837, and produced a very favorable impression throughout the country. The currency question then absorbed all others. The Sub-Treasury had been broached by Gouge, and a disposition was manifesting itself to destroy all banks, and to establish an exclusively metallic currency. The Madisonian took ground against these movements. One of its leading ideas was that a mixed currency is essential to a highly civilized and commercial State. On the 1st of September, Congress met in Extra session. After the election of Mr. Polk, speaker, the message of the President was read, and was found to contain unexpectedly a recommendation of the Sub-Treasury scheme. The Madisonian maintained its position. An election of printer was gone into. Gales and Seaton, of the National Intelligencer, Blair and Rives, of the Globe, and Thomas Allen, of the Madisonian, were the candidates. After three days' hard fighting, Mr. Allen was elected, on the 7th of September, and on the 12th ballot. He was then 23 years of age.

The difference of opininion between the original friends of the administration, on the ruling question of the day, led to warm discussions, and finally to a deadly feud. The spirit with which Mr. Allen conducted the discussion, on the part of the dissentients, who were stigmatized as "Conservatives," is doubtless well remembered by his cotemporaries. His opponents were called "Locofocos," and he was present at the meeting at Tammany Hall, N. Y , from which that name was derived. Mr. Allen's friends were called "Conservatives," because he had

happened to use the word in contradistinction to the course of those who were apparently bent on destroying all the State banks. Gen. Jackson seems to have had a consciousness of the strength of Mr. Allen's cause, when he predicted in a letter to Mr. Lewis that the Madisonian would overthrow the administration —a prediction that was perfectly fulfilled. Though frequently defeated, and reduced to a minority in Congress, Mr. Van Buren persevered in his course, and Mr. Allen and his friends could not turn back. Being for several weeks sick, nearly unto death, in the spring of 1839, he on his recovery wrote for the National Magazine a comprehensive review of the course of political events, which was extensively republished; and the same summer visited for several months the Virginia Springs, from which he wrote a series of "letters of a convalescent," descriptive of Virginia, which were much quoted. As the period approached for a nomination of candidates for the Presidency, for the election of 1840, Mr. Allen expressed his preference for his democratic-republican friend, Mr. W. C. Rives, of Virginia, but at the same time indicated a willingness to support Gen. Scott with a "conservative" candidate for the Vice-Presidency. Upon the nomination of Gen. Harrison and John Tyler, however, Dec. 6th, 1839, by the Harrisburg Convention, Mr. Allen being satisfied, that it was vain to keep up a seperate organization, and finding the real opinions of the candidates corresponding nearly with his own, he at once resolved to support the nominations as the most effective method of defeating Mr. Van Buren.

The columns of his paper bear internal evidence of the persevering labor and zeal with which he conducted the canvass, and sustained these nominations as "the true democratic republican ticket." On the 11th of April, 1840, his whole printing establishment was burnt—supposed to have been set on fire by an incendiary. The whole loss fell upon him, and swept nearly all he possessed, except his library. On the 2d of May following, however, his paper was re-issued with new materials, and as he announced it,

> "Self-born, begotten by the parent flame,
> In which it burned—another and the same."

At the great National Convention of Young Men, held at Baltimore, May 5th, he addressed an assemblage in Monument Square, as one of the Vice-Presidents. He also addressed meetings in different States, during that campaign, and made a speech to his political friends at a public dinner given to him in his native town. His paper reached a circulation, during this canvass, of near 20,000. At the session of 1840–41 he was elected printer to the U. S Senate. Gen. Harrison, at his arrival at Washington, took the earliest opportunity to acknowledge his indebtedness to Mr. Allen, and to say that he had correctly represented his views, and did him the honor to consult him in relation to the formation of the cabinet. Mr. Allen was at the bed-side when the venerable President died, and was cordially hailed as a friend by Mr. Tyler on his coming into the vacated office, and his paper was made the medium of executive communications. In the differences which ensued between Mr. Tyler and a portion of his cabinet, Mr. Allen took ground in favor of a united cabinet, and though charged with "blowing up the cabinet," he advocated simply, and without regard to personal consequences, what he deemed to be the true principle. He was sustained in this particular by Mr. Webster and Mr. J. Q. Adams, and was highly complimented on the floor of the Senate by Mr. Buchanan. Mr. Allen had a hand in the reconstruction of that cabinet, and used it in endeavoring to keep in Mr. Webster, and in bringing in Mr. Spencer. Never having been in favor of a National Bank, he found it perfectly consistent with his views, to sustain Mr. Tyler's Veto of the Bank bill. In the modified form in which it was

afterwards presented in response to Mr. Tyler's own views, he found more difficulty in attempting to reconcile the growing differences between Mr. Tyler and the Whigs. Not fancying another four years of political gladiatorship under the probable circumstances thus approaching, he took the first opportunity to withdraw from editorial life, and accordingly sold his establishment in the fall of 1841 to Mr. J. B. Jones. He was strongly urged to remain at Washington by the President, Mr. Webster and others, and Mr. Webster especially offered him many strong inducements, and his own powerful assistance with his pen. But nothing could induce him to continue. Mr. Allen is not, of course, responsible for the conduct of the Madisonian after he left it, but for the period of his control he may refer to its columns with pride and confidence. The peculiarity of Mr. Allen's editorial articles would be best illustrated by quotations, which we have not room for here.

In the spring of 1842 Mr. Allen came to Missouri, and in July married Miss Russell, daughter of William Russell, Esq., of St. Louis. Returning to Washington to settle his affairs there, he did not get fairly settled in Missouri until late in 1843. Though contributing to the education of brothers and sisters, he yet saved a small capital out of his business in Washington, which he judiciously invested in St. Louis, and this, with the property of his wife, has given him a competency.

At this period, Mr. Allen, when but twenty-eight years of age, had accomplished much of what so many consider the leading objects of life. Starting with a strong heart, but an empty purse, he had won position and fortune. But the details of his past life have been dwelt upon more at large than may be interesting to all, as showing certain peculiarities of character that eminently fit him for his present undertaking of a Pacific Railroad. With an intellect to aim for large results, he found himself possessed of energy, will, untiring perseverance and prudence to accomplish the end aimed for.

In St. Louis, Mr. Allen opened a law office, but in the course of a year or two, found his time otherwise occupied, and relinquished it. From this period, his name is connected with much of public interest. He published a pamphlet on the treaty of Paris of 1803. He addressed some articles to eastern papers against "letter smuggling," which were reprinted by the U. S. P. O. Department. By his writings and enterprise, he contributed largely to bringing into existence the St. Louis Horticultural Society, of which he was President for three years. In this connection it may be mentioned he was elected President of the National Pomological Convention, which sat at Cincinnati, but was not present to accept it. In 1847, he prepared for the St. Louis Delegation to the Chicago Convention a pamphlet, on the commerce and navigation of the Mississippi river and its tributaries. This pamphlet shows a great deal of research and judgment, and has been much sought for.

In March, 1848, Mr. Allen, at the request of a public meeting, made an address [printed] to the voters of St. Louis in behalf of a subscription to the St. Louis and Cincinnati railroad, and again he is found at a meeting of property holders advocating the widening of streets and extending the wharf.

In 1848, he was requested by the Whig Central Committee of St. Louis to run for the office of Senator, but, with the rest of the ticket, failed of an election.

These facts are only mentioned as showing his interest for the prosperity of St. Louis, and his active co-operation with its peculiar friends.

The project of a railroad to the Pacific having been discussed in various quarters, and Senator Benton having early in 1849 brought forward a bill in Congress to accomplish it, a large meeting of the citizens of St. Louis was called on the 20th of February, to take action on the subject. Mr. Allen reported to the meet-

ing a series of resolutions, strongly in favor of the construction of a "National Central Highway" to the Pacific, which were unanimously adopted, and subsequently received a hearty response from the Legislature then in session.

In May of the same year, a National Convention was called on the subject of the Pacific Railroad to be held at St. Louis, and 2,000 copies of the address of "the people of St. Louis to the people of the United States," from the pen of Thomas Allen, were published and freely circulated. The Convention was held in October. Fourteen States were represented. On adjournment, the duty was committed to Mr. Allen, of writing the address of the Convention to the people of the United States, and their memorial to Congress This duty he performed. He was also sent as one of the delegates to the Memphis Convention, held the 23d of the same month.

But notwithstanding all the talk and conventions, there was in truth very little immediate expectation of a railroad in Missouri. Joint stock companies were not in high favor in this State, and Missouri had been a State for 30 years, without scarcely a dream of any practical internal improvement.

Many railroad charters had been granted from time to time, but so little value was placed on them, that except perhaps in two or three instances, the corporators never proceeded so far as even to organize. It was fortunate for the cause of internal improvement in Missouri, that the General Assembly, at the session of 1848–49, granted a charter for the Pacific Rrailroad. This charter was obtained through the instrumentality of a few individuals, who anticipating objections on the part of Congress to the construction of a national highway through the State, aimed to obviate any impediment which might arise from that source, by procuring a charter in advance from the Missouri Legislature. It was not expected that this work would be commenced as a local or individual enterprise, at least for many years.

From this time Mr. Allen seems to have devoted much of his thought and energy to this subject, and and for some time to have fought single-handed against much prejudice and want of interest. On the 29th of January, 1850, he published a card calling public attention to the charter, and personally invited the corporators to a meeting. Before this meeting he read an address that, for comprehensiveness of view, and accuracy of detail, not only showed that he had really given his heart to the work, and thought and studied for its accomplishment, but also satisfied others of its present practicability. At this meeting the gentlemen present subscribed $154,000, and actual life was given to railroads in Missouri. This address has been extensively republished and quoted over the country, and at the time did very much to establish, abroad from this State, confidence in the subject.

Subsequently, Mr. Allen was elected President of the company, and has remained as such to the present time, each year seeming to demonstrate more clearly his fitness for the position.

But the work had to be commenced. A chief engineer was appointed, surveys to Kansas made, the ground broken on the 4th July, 1851, and the contractors fairly at work by September. Meanwhile, Mr. Allen was elected to the Senate for four yoars, taking his seat in the winter of 1850–51. He aroused interest in the country for the Pacific Railroad by making speeches in nearly every county from St. Louis toKanzas, and got up numerous petitions praying Congress for a grant of land to aid the work. In the Senate, he succeded in procuring a loan of State credit for $2,000,000. This was the great measure of the session, and was carried only after a long and arduous contest. Taking a general interest in the Internal Improvement policy for the State, he introduced a general Plank-Road law, and a general law relating to telegraph companies.

After returning from the Senate, Mr. Allen, still giving his whole time to the Pacific Railroad, spent some time at the East, and on the 10th of June, 1852, Congress passed the long desired act granting to the Pacific Railroad alternate sections of land.

At the request of Mr. Allen, as President of the Railroad Company, the Governor called an extra session of the Legislature in September, for the purpose of acting upon the grant. At this session some controversy arose as to whether the lands should be located on a line to Kanzas or on a line to the southwest part of the State, and nothing was accomplished, but a provision for the Hannibal & St. Joseph railroad, of which he was the author.

The outlines of a system of railroads for the State of Missouri connecting with the improvements of neighboring States, had been frequently discussed in the Western Journal, but hitherto the action of the Missouri Legislature in respect to the subject of internal improvements had been limited to isolated objects. The adoption of a system which would embrace the interests, promote the prosperity and insure the cordial co-operation of the people of all parts of the State, was regarded by Mr. Allen as necessary to a successful prosecution of those works, which had already engaged public attention. Acting upon these views, he submitted on the 8th of September a system of railroads for Missouri as follows:

The Pacific railroad from St. Louis to the Kanzas; the southwestern branch railroad running from St. Louis to the western boundary south of the Osage river; a railroad to the Iron Mountain, with a right of extension to the Mississippi river or to the Arkansas State line; the North Missouri railroad, from St. Louis to the Iowa boundary line; the encouragement of the Hannibal and St. Joseph railroad; a railroad from the western terminus of the Pacific railroad up the Missouri valley, so as to connect the Pacific with the Hannibal and St. Joseph road.

It is a remarkable fact, that although the Legislature was not prepared for such a suggestion at the time, yet in less than four months the entire system was adopted, and a loan of the public credit, made to every one of the roads named excepting one which was lost by the veto of the Governor. This was accomplished at the second session of the extra session held in December.

This system of railroads for Missouri, as now established by law, with the public means granted to each, is as follows:

The Pacific Railroad, total State loan	$3,000,000
Portion of land grant about 150,000 acres.	
The Southwestern Branch Road, State loan	1,000,000
Portion of land grant, about 1,150,000 acres.	
Iron Mountain Road, State loan	750,000
Hannibal and St. Joseph Railroad, State loan	1,500,000
Land grant to, estimated 600,000 acres.	
North Missouri Railroad, State loan	2,000,000
Total State loan authorized	$8,250,000

During the recent regular session of the 17th General Assembly of the State, Mr. Allen introduced and procured the enactment of a number of laws. Among the most important is the General Railroad Law, which contains provisions calculated to give energy to all our railroad improvements. This law provides for the levying of taxes to pay municipal subscriptions to railroads, the receipts for which are to be convertible into stock. It also establishes the guage for all railroads in Missouri at five feet six inches.

A law providing for a geological survey of the State, which Mr. Allen intro-

duced two years before, he carried through at the last session. By this law $10,000 a year, for two years, is appropriated to this interesting object.

By another law of his, the Pacific Railroad Company are authorized to extend their road to any point west of the boundary of the State. This is preparatory to the procurement of power and means from the Congress of the United States, to continue the road to California.

Duly estimating the vast expenditures to be made in the purchase of railroad iron, Mr. Allen was desirous of seeing the manufacture of rails started in Missouri, where the raw material is so abundant. He therefore introduced a bill offering a bounty on the production of railroad iron in this State, but owing to subsequent illness he was unable to follow it up. The same may be said of an important bill he carried through the Senate, transferring the recent land grant of Congress, in aid of a railroad from Cairo to Fulton, so far as this State has title, to the St. Louis and Iron Mountain Railroad, adding thereto for the same purpose alternate sections of the State swamp lands.

During the above period of Mr. Allen's service in the Senate, he was Chairman of the Committee on Internal Improvements. And it may be truly said, that during that period more has been accomplished on that subject than was ever before even attempted within the State.

It may thus be seen, that from 1849 to the present time Mr. Allen has devoted his whole time to Internal Improvements for the State, looking to them for connections with either ocean. The same untiring energy has been applied to this that in early life brought success in everything undertaken for himself, and there is now every prospect of success in this. Mr. Allen's property is principally in unimproved city lots, and his exclusive devotion to the Pacific Railroad, to the neglect of private interests, must have involved much pecuniary loss.

Mr. Allen has, at different times, appeared before the public as lecturer, and generally on subjects connected with the progress of the country. His interest in the Pacific Railroad led him to a study of Eastern commerce, and last winter, in St. Louis, he delivered a lecture on "Japan and the Expedition," which showed a great deal of research into the history of that sealed nation. At the request of the Missouri Historical Society, it was repeated at Jefferson City, and by that society deemed so entertaining and instructive, that they ordered it printed in pamphlet form.

Mr. Allen is still President of the P. R. Co., having been four times elected to that office—4th time March 30, 1853. The great work over which he presides is so planned and located, and so forks, as to strike the western boundary of Missouri at two important points, one in Jackson, and one in Newton or McDonald county, each prong being about 300 miles long, one of which is destined, inevitably, to be the great thoroughfare of the California and Chinese trade.

The following paragraph which appeared in the "Evening News," of 31st of December, 1852, does no more than justice to the sagacity and indomitable perseverance, which characterize the subject of this sketch. After noticing the part which others had taken in establishing our excellent system of railroads, the writer says:

"But after giving all the credit due them to all the early and steadfast friends of the Missouri railroad system, it is not to be denied that to Thomas Allen, Esq., of St. Louis, above all other men in the State, belongs the honor of maturing and establishing that system as the settled policy of the land. To his clear foresight, to his sound judgment, to his ardent support, and to his inflexible purpose, hopefully following up the cause he had espoused, in the darkest and most discouraging hours, and when the hearts of men ordinarily more sanguine, often failed them, do we chiefly owe the triumph that now swells with pride the breast of every citizen of the State."

Juvenile Reform Schools.

BY MRS. MARY R. HALL.

An article bearing the above title appeared in the "Western Journal" of December last, containing sentiments which should call forth a hearty response from all the philanthropic and humane, and lead to corresponding action.

To reflective minds, and more especially to those whose ardent desire is to promote the happiness and prosperity of our nation, nothing is so painful to behold, as the countless numbers of young, immortal beings, entering upon the stage of life, destitute of moral principle, regardless of the rights of God or man, trampling upon virtue, and addicted to every known vice. And then to feel that the sin lieth *not* at their own door; that they are *not*, in most cases responsible for the crimes they are led to commit; truly, this conviction should call forth every energy for the suppression of the evil.

Ignorance, is but a stepping-stone to vice; and where it is suffered to exist, vice must almost necessarily follow.

The little infant of a poor loathsome, degraded parent, when it first opens its eyes upon the light, is stainless and pure in spirit as a cherub! Its little soul has never felt the polluting impress of sin; its tiny hand has never been raised to do deeds of violence; nor has it ever profaned its God or cursed its fellow men! Days, weeks, months, pass away and lengthen into years during which a fearful change has been wrought.

From the first dawn of existence the child has breathed a polluted atmosphere. The mother's voice has never been heard in gentle accents, teaching the little one to lisp its earliest prayer; nor has he been taught to bow the knee, and lay the sacrifice of a broken heart upon the altar of the Most High!

The father has never instilled into the mind of his boy, principles of morality or virtue, nor warned him to shun the path that must termnate, inevitably, in disgrace and ruin.

On the contrary, his example is such as to lead the child at once to enter upon a course of vice, and to close up one by one every avenue of his soul; when at an early age the hardened wretch shrinks not from crimes too black to be recorded here. No light has been thrown upon his darkened mind from his intercourse with books, for alas! the child has never been taught to read! Thus he goes forth into the world to mingle with companions as hardened and vicious as himself when uncared for, unsought, and shunned by the virtuous and good, what remains for him but to rush madly on to ruin, unmindful of all consequences? Thus generation after generation passes away without any perceptable, moral change; their numbers increase with fearful rapidity, deluging our land with blood and guilt, polluting the very atmosphere they breathe, retarding the progress of virtue, and obstructive to the peace and prosperity of our nation.

And thus they are suffered to exist; plague-spots in every community, contaminating and corrupting all who come within reach of their baleful influence.

And so they will continue to pass on, unless vigorous efforts are

made for suppressing the evil, while there is yet hope that attempts to arrest its progress may be crowned with success. One thing is certain; these poor, degraded beings will never reform themselves. They have no *desires* for reformation, and allowing, that they *had*, they have no moral power to effect it.

What then is to be done? What is the duty of those who have the power, who are conscious that they have weapons in their hands, which if rightly wielded, must strike a deadly blow at the root of vice?

What is the duty of our Legislators; of those who have wealth, influence, and who fill high stations of honor in our country. in regard to this great evil, which is swelling and increasing every generation, and threatening the destruction of our glorious Republic?

While other great questions relative to national policy are agitating the public mind, shall *this*, which is of more importance than all others combined, be suffered to pass by totally disregarded? I speak not without due consideration, when I say that this momentous question is of vast more importance, than all others combined; upon which so many pens are employed, and which absorb the thoughts of many of our noblest minds! And why? Is not the fearful increase of vice and immorality undermining the foundation upon which the noble superstructure of our Republic rests? Is it not sapping the large life-drops from the very fountain of her existence—aiming its poisonous arrows at her noble heart—infusing its deadly venom into every vein and artery of her system—weakening every nerve and causing the whole fabric to feel such convulsive shocks, which if continued must terminate her existence?

In vain are institutions of learning multiplied in our land if the large class of poor, degraded human beings feel for them no interest and have no access to them. While the favored ones are struggling to climb up the rugged hill of science, the strong undercurrent of vice is successfully dashing its turbid waters against its base, and inch by inch will wear away each foothold, until it will be left in its ruins, unscathed by the toiling student, a blackened wreck of its former greatness!

Divines may exhaust all their energies and their eloquence, in striving for the promotion of virtue and religion in our land, but their voices are not heard by those for whom we now plead, they are not found among those, who go up to worship in the sanctuary of the Lord of Hosts.

Laws may be enacted and enforced, still vice moves on in bold defiance, gathering strength from increasing numbers.

True, benevolent individuals have snatched here and there a victim and torn off his fetters—Sabbath schools have accomplished much and yet the work is scarcely begun. The public mind is not sufficiently aroused upon this subject, and it is to be most fervently hoped that the voice from St. Louis may be heard throughout the length and breadth of our land, until an appropriation be made for the establishment of "*Juvenile Reform Schools*" in every city in our Union! It will add a gem of unrivalled lustre to the already brilliant coronet which sparkles on the fair brow of our sister city, if she stands first in this great and noble work of reform.

I have thrown together the above, scattering remarks, without regard to system or order, (for I write not to please the critic, unless it please him to find fault) and will close by adding a few more of my own which have already appeared in print; but which I think as appropriate in this place as any that suggest themselves to my mind at present.

Education alone can elevate human beings who have so long groped their way amid the dark avenues of ignorance, superstition and vice, till their benighted souls scarce bear the impress of God's holy image—till form and power of speech alone, distinguish them from the beasts that perish.

I am well aware, many will contend that but little can be done towards elevating such characters, that they will manifest their low origin after the utmost pains has been bestowed upon them. That there will always be grades in society, I do not doubt; but I do not believe that it must necessarily follow that thousands must sink *down* in ignorance and pollution till it becomes impossible to reclaim them.

There will always be *poor* in our land, but poverty should be no excuse for *ignorance* or *crime*. *Educate the mass, and there will be less poverty:* for where the mind is enlightened, corresponding efforts will be made to occupy a respectable position in society. I do not contend that children of illiterate, low-bred, vicious parents, will, as a *general* thing rise at once to distinction and honor, even though they may have the advantages of a common education.

But they will advance a *step at least*—there will be a very decided improvement of the old stock,—continue to educate, and the next generation will take a step *still higher*, and the next *higher yet;* and when a few generations shall have passed away—as an orator is proclaiming to assembled thousands, whose whole souls burn with the fire of his eloquence,—as the voice of the statesman reverberates through the halls of Congress, till lost amid the deafening shouts of applause;—as the man of God stands high upon the walls of Zion, proclaiming the great truths of the everlasting gospel,—as the pale poet sits till his midnight lamp but dimly burns, pressing his trembling hand upon his throbbing brow where ideas are rapidly concentrating, and struggling to be freed from the prison-house of his brain, that they may astonish the world with their powerful imagery—who, *who* will then trace back the generations long since passed away, and behold the ancestors of these exalted individuals, poor, unlearned, vicious,—inhabiting the low, dark hovels and the dens of crime, that now mar the beauty of every city and town?

Nay, tell me not that it is impossible for education to accomplish this great work! *It can and will do it!* Who would believe that the hundreds of the finest flavored apples all sprang from the wild crab-apple, which in its uncultivated state is so unwholesome and unpalatable; and from which we would turn away with a wry face if we attempted but to taste the fruit? And yet this is the case! And the potatoe, that root so highly esteemed is said at first to have been poisonous! And so might many of our choicest luxuries, be traced back to most humble origins, the *first* crop after cultivation was but little improved, but year after year of unremitting toil has brought them to that state of perfection for which our ancestors labored!

And is not the human mind, that noble specimen of God's workmanship, as capable of being improved as the wild unpalatable fruits of earth? *It most assuredly is:* and education shall be the great weapon of our warfare, which we will wage against ignorance and vice, until the object for which we strive shall be obtained.

Keokuk, Iowa, March, 1853.

THE PLAINS,

By FRANCOIS DES MONTAIGNES, of St. Louis.

CHAPTER FIFTH.

An episode, in which Francois puzzles himself, as well as the reader, in useless conjectures respecting the object of the Expedition as well as the probable cost thereof.

Having thus presented, with our inadequate descriptive powers, the *tout-ensemble* of this glorious enterprise, so as to afford the mind's eye of the reader, a *coup d'œuil* at the ingredients which form its component parts, as well as an idea of the powerful precipitate constituting its basis, and which whenever cast into the mixture, causes the immediate descent of the balance to pusilanimity, it becomes us, as the *Froissart* of the stirring events of the period, to favor the friendly reader, with a glimpse likewise at the probable causes which *may* have originated the compound, and the probable important results to be expected from its administration by the wise pharmacopists who manufactured it.

In other words, these memoranda which set out ostensibly to narrate *facts*, should embody as far as possible, the various circumstances which may have influenced the chronicler, whilst digesting them; so as to afford the reader an equal chance with himself in balancing the *pros* and *cons* involved therein, and in determining from the context, whether prejudice has leaned to the right or left, and deprived even the facts themselves of that indispensable beauty of genuine History; strict and bona fide impartiality.

The reader, like a traveller with the *mirage* in view, has toiled on through the four preceding chapters, under the vain delusion, that each succeeding one, would, like some welcome finger-board, inform him of the distance yet to be traversed, or at least afford him some clue to the route he is pursuing.

But, like some of the unfortunate pilgrims mentioned by the good John Bunyan, he has been tempted to loiter, by the wayside and be amused with the tricks of rascally mules, and long yarns of marvellous hunts and still more marvellous speeches.

He has camped, cooked, eaten, slept, travelled and hunted with the explorers. He has chatted with the engages, and has peered into that museum and sanctum of science, the wagon of instruments; and, notwithstanding all this and a great deal more, he is doubtless as much in the dark as the most unsophisticated hand in camp, respecting the *why*, the *where* and the *wherefore* of it all.

What of *that?* Are there not compasses and theodolites in abundance?—What difference should it make therefore, whether our destination be Terra del Fuego or the Mountains of the Moon? It is none of our business at any rate, and provided we pay proper attention to our mules and assist at the wheel in case a wagon stalls or the observatory has to cross a mud puddle, we are doing our duty as explorers and taking a sufficient *reconnaissance* of the region for all practical purposes.

As to the *why* and the *wherefore* of all this *armada*. *That* is another question,

——"Aye there's the rub."

For this is rather an indelicate query and very rude, when viewed in connection with some of the previous notes. But having started on this trip, with the full assurance of realizing his hopes and the oft repeated dreams of his boyhood—obtained by the warmest and strongest of written recommendations, Francois, for one, was bound for California; whether he ever succeeded or not, will be discovered in the sequel.

But the Expedition; the Pack-saddle Expedition, with all its droves of horses and wagons, and white men, camp-kettles and black cooks. Why was all *this* leaving the borders of Missouri and striking out towards the Far West?

Yes, the question naturally presents itself at this juncture of our narrative, as to the why and wherefore so large a body of armed men, sufficient to form a small army in the Indian Country, with their bands of horses, mules, and beeves, their train of wagons, laden with munitions, ammunition, provisions and equipments of every variety from one of Franenhofer's best refractors to Thomas Gray's patent iron pickets, etc, etc, etc, with kegs of brandy, pounds of vermilion and boxes of vermicelli and macaroni—are thus gathered together on our border, and what important results can possibly be expected from their future movements?

Here are eighty men or more, some two hundred head of horses and mules, hired or purchased at the expense of government, all (excepting the men) properly branded with the United States brand, (or rather with the letter F which amounts to the same thing,) and all to be paid for with United States money, out of the U. S. pocket.

(By the bye, for fear we forget it, the Frenchman's little patrimony at home paid an annual tax.)

The expense of such an enterprise therefore, though gotten up on the most economical scale, some of the men getting *only* fifteen and others *only* seventy-five dollars per month, and the bacon and sugar lasting *only* as far as Pawnee Fork, could not be insignificant, even for such a treasury as Uncle Samuel is known to have a right to check upon; and the results to be expected should doubtless correspond, in importance, to the greatness of the expenditure.

Forty, fifty or sixty thousand dollars, is an inconsiderable sum, to be sure, for a great and wealthy people, and especially for a free one; and *millions* have been expended since the flood, by the enlightened portion of the human race in exploring the countries and ascertaining the manners and customs of the barbarian balance. King and Queens, Czars and Emperors, have vied in equipping fleets and armies to search for and conquer new lands and nations for their respective crowns, and *Discovery* hand in hand with *Conquest*, with their overwelming Banner of Progress, have traversed Oceans and Continents with their mighty tread.

The fleets of an Isabella and of a Ferdinand bore Columbus in search of a world. The enterprise of an Elizabeth scattered her navigators and bucaneers over the Atlantic and Pacific, and the dollars of Uncle Samuel are bound for the expenses of the Great northwestern, mule-wagon and pack-saddle exploring expedition, of 1845.

Christopher Columbus discovered a hemisphere, Captain Cook whole archpelagoes; Vancouver, Byron, Drake, Wallis, Wilkes, etc., sailed around continents and islands innumerable,—through sounds and straits, oceans, inlets, bays, and gulfs, and Franklin lies ice-bound in the Polar Seas.

What therefore have we to discover?
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Has the Columbia ceased to flow into the Pacific, or the Colorado into the Gulf of California? Have Lewis and Clark ever crossed the Rocky Mountains or Pike and Gregg the *Llano Estacado*? Has the broad wagon road to New Mexico, become such an insignificant Buffalo path, since 1820, as to require an army of surveyors to ascertain its bearings, and have the Spanish Peaks ceased to be land-marks for the mountaineer and trader? Are geographers ignorant of the locality of Bent's Fort or Salt Lake, and has *The Great South Pass* been lately removed by the Indians or an earthquake, from the place it occupied, when our trappers passed through its broad defiles *many years ago*; in search of new stamping grounds beyond it? That the government of the United States find it necessary to despatch an expedition of this kind at an enormous cost, to ascertain the truth of such ancient axioms?

Does the solution of such practical problems require the mathematical science of an Archimedes or a Herschel, and all the pack animals to be purchased along the Missouri and Arkansas borders? No, the object cannot be discovery, for the simple reason that there is nothing but what *has been discovered*, long ago. There may probably be something to *analyze*; the Beer Springs for instance or the deposits of mountain rivulets, or something to be collected in the way of fossils and sphenopteris. But surely Uncle Sam would not pay so much for a whistle, nor for the rarest organic remains, even were the Petrified forest and the stalactite Buffalo included.

The object of this expedition, therefore, cannot be an idle one; neither projected for the improvement and amusement of government officers, at government's expense, nor for a topographical and analytical survey of the far west, intended to connect with Wilkes explorations and that of the *Japan Squadron* as appropriations for such purposes are, for the most part, rather tardily acted upon, and generally share the fate of such Bills as propose a pension, an improvement in the navigation of western waters or others unimportant. If a strict and rigid survey of the great prairies and Rocky Mountains be in contemplation, preparatory to purchasing from the Blackfeet and Camanches, and cutting their war-grounds up into fortys and eightys, why does not government in its wisdom evince more of it, by sending out men as familiar with every hill and valley, every creek and river, every route and pass, every nook, corner, crag, crevice and hole, in this magnificent portion of America, as they are with their rifle and knife? who have chased the Buffalo over the level plain, and fought the grizzly bear in the rocky defiles *years ago*; who have wandered over the heated sands and camped in the eternal snow—who have chained their traps in the mountain stream and in the deep bottomed cañon, *years ago*; who have thirsted and starved and fought to the knife with the ferocious tribes infesting both willow bottom and boundless prairie, *years ago*; men who have grown grey, since they passed and repassed with their traps and their trappings, their animals and their beaver packs, through *The Great South Pass*, *years ago*; men who have passed through all these scenes without murmuring or flinching, or attracting attention even from that government which should have, at least, remembered them *many years ago.**

Such men, for instance, as Fitzpatrick, the Sublettes, Campbell, Vasquez, Ashley, Smith, Bridger, Walker, etc., etc. These are the surveyors, these are the pilots, these are the savans, and practical ones at that, who could have informed Government, *years ago*, for a less sum than forty or fifty thousand dollars; whether a two horse wagon laden with household goods and gods, if not with instruments and specimens, could pass the Rocky Mountains. These are the "western men, who are animated with the spirit of exploratory enterprize which characterizes that people." (Vide Fremont's Rep., Expedition, sec, fol. 226.)

Those who have traveled, trapped and traded upon every stream of note, should certainly be capable of informing us of the character of those streams, and though their rifle and butcher-knife be but rude instruments to take an observation with, cannot we rely upon their statements as to whether California lies west of the Cordilleras or the Navajoes south of the Arkansas? Can they not inform us of the Indian feuds, whether the Sioux are at war with the Crows, —the Arapahoes and Chiennes with the Apaches,—the Camanches with the Mexicans, etc., etc? Can they tell us anything of the habits of the Buffalo,—of the Bear, the Beaver, the Elk, the Deer, the Antelope, the Wolf, the Fox, the Prairie dog, the Indian and the rattlesnake; or are these animals, of which they are ignorant? Though unacquainted perhaps with the Linnaean phraseology and the dead languages, they may possibly speak a little Sioux or Spanish and hold an interesting conversation with the balance by means of the manual alphabet? Have they ever noticed *ribes aureum* in the mountain valleys, plums on the Washita or *pinus monophyllus* in the Sierras? Have they seen rabbits among the *artemisia*; had *cactus* in their moccasins, or fed the starving animals on *equisetum hyemale*, or the bark of the *populus canadensis*? Enough of this, a truce to such questions; for Uncle Samuel with all his foresight is certainly wrong for once, if the object be geographical discovery. He would certainly have employed such veterans as we have mentioned, if not as *chiefs*, most assuredly as *pilots* in guiding his greenhorn relatives over the vast solitudes which constitute the war-ground of the Redman and the home of the Trappers.

We must therefore look to the other horn of the dilemma for the solution of the query; Conquest must be the motive power, which prompts the old gentleman, to send forth his little army of sappers and warriors, dragoons and riflemen: Some important province, some mysterious land overflowing with milk and honey

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* NOTE.—"And, for the guidance of the future historian of the West, we deem it but justice to state, while the witnesses are still living to confirm the assertion, that MAJOR FITZPATRICK, in the year 1824, led through the SOUTH PASS the first band of white men, who ever crossed that route to the Pacific slope."

See article by Solitaire in vol. 3, No. 34, of St. Louis Reveille, containing a brief account of Major Fitzpatrick.

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Such men, for instance, as Fitzpatrick, the Sublettes, Campbell, Vasquez, Ashley, Smith, Bridger, Walker, etc., etc. These are the surveyors, these are the pilots, these are the savans, and practical ones at that, who could have informed Government, *years ago*, for a less sum than forty or fifty thousand dollars; whether a two horse wagon laden with household goods and gods, if not with instruments and specimens, could pass the Rocky Mountains. These are the "western men, who are animated with the spirit of exploratory enterprize which characterizes that people." (Vide Fremont's Rep., Expedition, sec, fol. 226.)

Those who have traveled, trapped and traded upon every stream of note, should certainly be capable of informing us of the character of those streams, and though their rifle and butcher-knife be but rude instruments to take an observation with, cannot we rely upon their statements as to whether California lies west of the Cordilleras or the Navajoes south of the Arkansas? Can they not inform us of the Indian feuds, whether the Sioux are at war with the Crows, —the Arapahoes and Chiennes with the Apaches,—the Camanches with the Mexicans, etc., etc? Can they tell us anything of the habits of the Buffalo,—of the Bear, the Beaver, the Elk, the Deer, the Antelope, the Wolf, the Fox, the Prairie dog, the Indian and the rattlesnake; or are these animals, of which they are ignorant? Though unacquainted perhaps with the Linnaean phraseology and the dead languages, they may possibly speak a little Sioux or Spanish and hold an interesting conversation with the balance by means of the manual alphabet? Have they ever noticed *ribes aureum* in the mountain valleys, plums on the Washita or *pinus monophyllus* in the Sierras? Have they seen rabbits among the *artemisia*; had *cactus* in their moccasins, or fed the starving animals on *equisetum hyemale*, or the bark of the *populus canadensis*? Enough of this, a truce to such questions; for Uncle Samuel with all his foresight is certainly wrong for once, if the object be geographical discovery. He would certainly have employed such veterans as we have mentioned, if not as *chiefs*, most assuredly as *pilots* in guiding his greenhorn relatives over the vast solitudes which constitute the war-ground of the Redman and the home of the Trappers.

We must therefore look to the other horn of the dilemma for the solution of the query; Conquest must be the motive power, which prompts the old gentleman, to send forth his little army of sappers and warriors, dragoons and riflemen: Some important province, some mysterious land overflowing with milk and honey

* NOTE.—"And, for the guidance of the future historian of the West, we deem it but justice to state, while the witnesses are still living to confirm the assertion, that MAJOR FITZPATRICK, in the year 1824, led through the SOUTH PASS the first band of white men, who ever crossed that route to the Pacific slope."

See article by Solitaire in vol. 3, No. 34, of St. Louis Reveille, containing a brief account of Major Fitzpatrick.

and naked savages, lying deep in the recesess of one of the great Basins, perhaps, some wealthy and peaceful tribe, the Diggers, probably, who would prove industrious citizens after naturalization. The fisheries of the Columbia, perhaps, have caught the old man's eye, or may be he hears the groaning and clinking of gold dollars beneath the ponderous millions of *Mariposa!*

Pshaw; Alexander wept hundreds of years ago, because he had conquered *all*, and supposing there was any thing left at the present epoch, would Uncle Samuel, even in his dotage, send a fox to find his cheese or crows to cover his corn?

Conquest therefore is out of the question, as *filibustering* is a practice discountenanced and unassisted by our law-abiding government, which uses the most stringent measures to prevent and the strictest impartiality in punishing it. The Root diggers and Klamats, as well as the Mexicans and the Californians may rest contented therefore, whilst we can console ourselves under the embarassing circumstances, with the reflection that we are going *somewhere*, for *some* purpose, for *some* fifteen dollars per month, and are literally *some* ourselves; we scarcely know *what*. Allons donc encore! *We* will attend to the packs and the mules, the botanist will tend to the gooseberries, the geologists to the fossils, the camp master to the wagons, the black cook to the maccaroni and the captain to *himself*.

To the obliging reader, however, who has taken the trouble to read it, I would suggest that the above effusion is but another of those visionary episodes, to which all travellers and especially explorers are prone, and amounts to nothing more in fact, than a mere *conjecture* or *guess*, as he will readily pronounce it to be, after perusing it, and, as such, entitled to no more consideration, among these invaluable memoranda, than is justified by its affinity to the subject in hand or to the facts duly set forth and expatiated upon in the sequel.

It would have gratified the writer of this sketch to have had it in his power to throw more light upon this sombre portion of our narrrative, and to have informed the reader, plainly and honestly, to what point of the compass we are destined as well as the object of the movement, but as has been shown, this were an impossibility by reason of the dense cloud of unmeaning mystery thrown over all, which caused all information on these points to be centred in one grand and illustrious focus of intelligence and science.

The broad, boundless prairie stretches out before us, and as we cast our glance over its ocean like surface, we almost hesitate to spread our untried sails, without knowing the port to which we are destined, or the purpose for which we are risking our lives upon its bosom.

State Lunatic Asylum of Missouri.

With emotions of gratitude, mingled with pride, we record the fact, that Missouri has prepared an Asylum for the Insane: grateful, for the liberal appropriations made for the relief of the afflicted, and proud of a monument which attests the public spirit and enlightened humanity of her people. It is by such works, that the sentiment of patriotism is cherished and strengthened in the hearts of men binding them to their country and to each other. School-houses, churches and humane institutions are the bulwarks of civilization, stronger and far more to be trusted than the prison and fortress.

We have carefully perused the report of the Board of managers of the late General Assembly, and are constrained to say that the document bears strong testimony of the enlightened judgement and philanthropy of the gentlemen under whose auspices the institution has been organized.

The buildings, with 460 acres of land, belonging to the institution, situated adjacent to the town of Fulton, are constructed on the most approved plan, and afford accomodations for 100 patients.

Though nominally opened on the 31st December, 1851, the institution was no in a proper condition for the reception of patients until the middle of the spring of 1852 Up to November 29th of 1852, 70 patients had been admitted: 36 males and 34 females. Of this number have been discharged "recovered" 4, "much improved" 2, "improved" 1, total 7, died 1. The superintendent adds: "there are 5 others I now consider well, who are remaining in order that their cure may be permanent." This must be regarded as highly encouraging, especially when it is remembered, that owing to the want of timely treatment, a large portion of the cases were of long standing, and the chances of recovery greatly lessened.

The managers recommend the enlargement of the building so as to afford accomodations for 200 patients, and we believe that the Legislature made an appropriation for that purpose, but we have not seen the law.

Among the many enlightened views contained in the report of the Superintendent, he suggests a modification of the law that will authorize the admission of all classes of patients, at the expense of the State. We have considered this suggestion in all its bearings, and feel convinced that it is the true basis upon which the institution should be established, and we trust the managers will continue to urge this policy until it shall have been adopted by the Legislature. The report of the superintendent, Dr. T. R. H. Smith, is highly creditable to him as a philosopher and philanthropist, and attests his qualifications for the delicate and responsible duties of his office.

The Board of Managers consists of John B. Leeper, President, Charles H. Hardin, Secretary, Thomas B. Harris, David McKee, John B. Snelson, M. D., Enos B. Cordell and George K. Budd.

The Drama.

The object of the Drama is to represent human nature. The object of the Church is to inspire divine nature. The harmonious combination of human and divine nature is the most perfect condition at which a sensible spirit can attain on earth. Some men are endowed with a genius of common sense. Some men are endowed with a genius of supersensual spirit. A few are endowed with a combination of both. Virtues and faults are found in the sphere of sense, and also in the sphere of spirit. Criticisms are written to guide the genius of common sense towards the highest point of civil refinement. Commentaries are written to guide the genius of the "divinity within us," towards the highest point of religious sensibility. Licentiousness is the greatest fault—liberty the greatest virtue in the eyes of all true critics of sense and spirit.

Civil and religious liberty is the aim of criticism; for it indicates not only proper conduct, but also proper motive; it not only polishes sensible manners, but also purifies conscious feelings, and thus places human in the most harmonious relation with divine nature.

These ideas may seem too nice for vain and coarse souls; yet tested by sound understanding and pure imagination, they are sustained by truth.

The drama—the legitimate drama, on these principles, promotes the cause of humanity. It polished the Greeks, and prepared them for a new order of existence.

"High on Pernassus' top her sons she show'd,
And pointed out those arduous paths they trod;
Held from afar, aloft, th' immortal prize,
And urged the rest by equal steps to rise.
Just precepts thus from great examples giv'n,
She drew from them what they derived from Heaven."

And the apostle of the Gentiles, to sustain his argument at Mars Hill, quoted from one of their own poets, and in the establishment of the true divine faith among them, showed its harmonious relation to their civil refinement.

These views may be more fully illustrated hereafter. The legitimate drama will, of course, form the basis, and instances of the most elevated classic characters may be derived from the noble representations at the People's Theater.

SUNSET GLEAMS FROM THE CITY OF THE MOUNDS. By ETHEL GREY. *St. Louis, Mo. New York. Printed by John F. Trow,* 1852.

Morning Rays we would have called these poems. Dew drops of Heaven and tears of tenderness, blooming flowers and bursts of affection, pulsations of wind and motions of spirit, diffused throughout her work, denote the tone and disposition of the mind of ETHEL GREY. Her GLEAMS are "morning rays," for she is only 19 years of age. Her GLEAMS are morning rays, for they are fresh and refreshing. Her GLEAMS are morning rays, for they are signs of a brilliant day, arising on the literary field of Missouri.

We have just perused her 77 poems, 182 pages, 8vo., and have noted too many favorites to mention them here. Yet we cannot refrain from quoting a few lines replete with practical tendencies, and prolonging the tone of LONGFELLOW's operating *Psalm of Life*:

LABORARE EST ORARE.

"Up and be doing; Time's waters are flowing
Ceaselessly on to Eternity's main;
Ceaseless is every young seed in its growing,
Till it produceth the life-cheering grain."
* * * * * * *
"Ever press forward in some earnest motion,
For every thing tells us that *motion is life.*"
* * * * * * *
Shrink from his labor! Ah! no rather say,
With heart, soul and voice in the joyful uprising
"To work is to worship"—to labor to pray."

Nor will our admiration allow us to omit the notice of that pathetic and Heaven aspiring invocation of the departed:

"Isabel, Isabel,
Spirit loved Isabel,
Angel-born Isabel,
Whisper to me!"
* * * *

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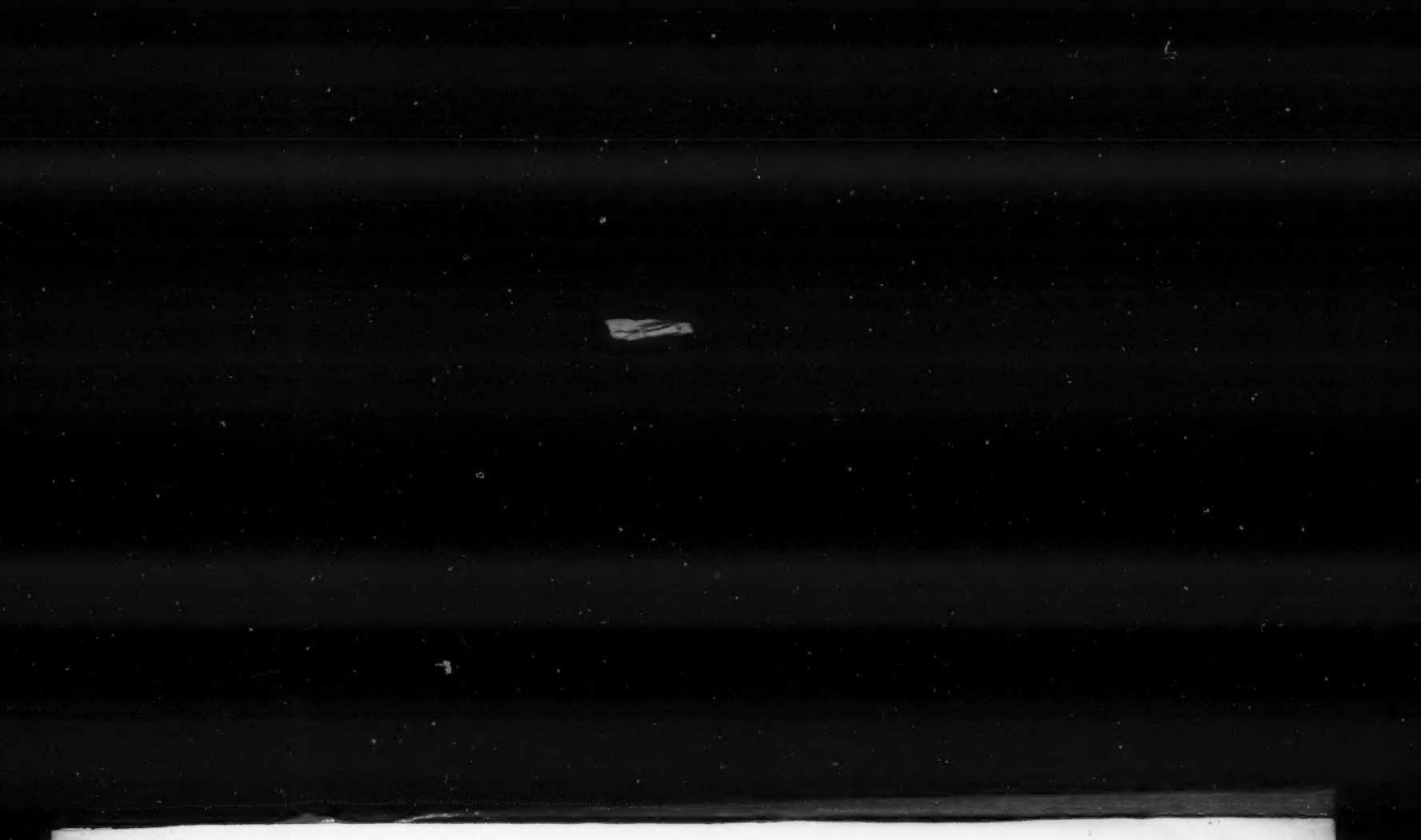

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New Warehouse, No. 88 Second street, between Olive and Locust streets, St. Louis, Mo.

Slate Yard.

JOHN M. CANNON, Slater, No. 15 and 17 South Sixth street, St. Louis, would respectfully inform the public that, having now completed his arrangements, he is prepared to make contracts for any work in his line. He has in his employ practical slaters, and is well prepared to execute in a workmanlike manner, and with dispatch, all orders entrusted to his care. He keeps constantly on hand, and for sale, Welch slate, Rich tiles, sheet lead, slate tugging, slate hearths, copper, brass and iron slating nails, Rosendale cement, and all other articles pertaining to his business. He will strip from roofs zinc, sheet iron, tin, or other covering, and substitute therefor slate. Slate removed from one roof, can be used to advantage on another, which is not the case with any other roofing material. His terms are such as cannot but prove satisfactory. Apply as above.

PACIFIC RAILROAD

Trains will run each day during the week, as follows: Leave St. Louis Depot, (on 14th street,) at 9 o'clock, A. M., and at 3 o'clock, P. M. Leave Cheltenham at 11 o'clock, A. M., and at 6 o'clock P. M. On Sundays.

Leave St. Louis at 11 o'clock, A. M.
" " 1 45, P. M.
" " 3 30, P. M.
Leave Cheltenham at 12, M.
" " 2 45, P. M.
" " 5 P. M.

FARE EACH WAY, 25 CENTS.

Passengers are particularly requested to purchase tickets before taking seats in the cars. ☞Omnibuses run regularly from the corner of Fourth and Chesnut streets, in connection with all the trains.

THOMAS S. O'SULLIVAN,
March, 15, 1853. Chief Engineer.

Banking Houses.

PAGE & BACON, Banking House No. 139 Main street, St. Louis, next door to the Bank of Missouri.

N. B. Deposits received, Drafts and Notes from all parts of the Union collected and Exchange on the East and South for sale at all times.

Also Branches of Exchange and Banking Houses at San Francisco and Sacramento Cities, California.

L. A. BENOIST & CO., bankers and exchange dealers, No. 83 Main street, east side third door north of Olive street, St. Louis, Mo. Interest paid to depositors, drafts and notes collected, sight and time bills purchased, and sight exchange on the eastern cities and New Orleans for sale, at the lowest rates, in sums to suit purchasers.

JOHN J. ANDERSON & CO., Bankers and exchange dealers on the north-west corner of Main and Olive streets, St. Louis, Mo. Interests paid to depositors, drafts and notes collected, sight and time bills purchased and exchange on the eastern cities and New Orleans for sale at the lowest rates.

LOKER, RENICK & CO., bankers and exchange dealers, No. 132 Main street, west side, third door north of Vine street, St. Louis, Mo. Interest paid to depositors, drafts and notes collected, sight and time bills purchased and sight exchange on the eastern cities and New Orleans for sale at the lowest rates in sums to suit purchasers.

LUCAS & SIMONDS, Bankers and Exchange Dealers, Corner of Main and Chesnut Streets, St. Louis, Mo.

Drugs.

CHARLESS, BLOW & CO., Importers and Wholesale Dealers in Drugs, Paints, White Lead, Oils, Window Glass, Glassware, Perfumery, &c., Nos. 70 and 72 Main Street, St. Louis, Mo.—☞N. B. Ginseng and Beeswax bought at highest market rates.

St. Louis Cotton Factory.

ADOLPHUS MEIER & Co., Manufacturers of St. Louis Cotton Yarn, &c., Importers and Dealers in HARDWARE and CUTLERY, No. 23, corner of Main & Chesnut Streets, St. Louis, Mo.

Hats & Caps.

H. & R. B. WHITTEMORE & CO., wholesale dealers in Hats, Caps, Bonnets and Straw Goods, No. 143 Main str., St. Louis, Mo.

☞Cash paid for Furs and Deer Skins.

Saddlery.

T. GRIMSLEY & CO., Dealers in all kinds of Saddles, Bridles, Harness, Trunks, Carpet Bags, &c., No. 68 Main street, four doors below Olive st., St. Louis, Mo.

Commission Merchants.

ENGELRODT & BARTH, Commission and Forwarding Merchants, No. 126 North Second Street, between Vine Street and Washington Avenue, St. Louis, Mo.

RUSSELL & BENNETT, Wholesale Grocers and Commission Merchants, North-West corner of Olive and Second streets opposite the Monroe House, St. Louis, Mo.

CHOUTEAU, HARRISON & VALLE, Commission Merchants and Proprietors of the St. Louis Rolling Mill. Manufacturers, from the ore of the Iron Mountain, of Bar Iron in all its various shapes, Sheet Iron and Boiler Plate, Nails, Spikes, &c., &c.
Warehouse No. 129 North 2d street, St. Louis.

Merchant Tailor.

J. H. BLOOD, Merchant Tailor, No. 21 Third Street, One door from the corner of Chesnut Street, St. Louis, Mo.

Dry Goods.

CROW, McCREERY & CO., Wholesale dealers in Dry Goods, No. 70 Main street, St. Louis, Mo. Wayman Crow, Rhoecon R. McCreery, Wm. E. Barksdale, Wm. A. Harguline, Charles D. Appleton.

WOODS, CHRISTY & CO., wholesale dealers in Dry Goods, No. 76 Main street, St. Louis, Mo. James Woods, William T. Christy, James C. Christy, Robert K. Woods.

Boots & Shoes.

SCHRETER & EBY, Manufacturers of Boots and Shoes, No. 44 Main Street, Fourth door South of Pine, St. Louis Mo.

Watches and Jewelry.

C. D. SULLIVAN & CO.,
JEWELLERS, Watch and Clock Makers, No. 39 Fourth Street, opposite the Planter's House. A large and well selected assortment of Clocks, Watches, Jewelry and Silver Spoons constantly on hand and for sale low. All kinds of Jewelry made to order and neatly repaired. Engraving neatly executed. The highest price paid for old Gold and Silver. All orders punctually attended to.
March 1853.

Flowers.

FLORA GARDEN.—This establishment contains a collection of Plants and Flowers not excelled, perhaps, by any in the United States. Of ROSES alone there are 230 varieties; and the proprietor has devoted ten years to storing his HOT-HOUSES, 420 feet long, with specimens of rare and beautiful plants, and flowers from almost every part of the globe. The garden is pleasantly situated on South Seventh street and affords a delightful retreat from the noise and dust of the city. A commodious SALOON has been fitted up and will be supplied with Confectionary, Ice Creams, and other refreshments suitable to the season and the place. Spirituous liquors are excluded from the premises. Bouquets of the richest flowers and most tasteful combination furnished throughout every season of the year.
March 1853. G. GOEBEL.